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PRACTICAL OBSERVATIONS ON SOUTHERN OR TEXAS CATTLE FEVER.*

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THIS bovine disease is known under various names—Texas Fever, Splenic Fever, Spanish Fever, etc., all of those terms possessing no striking significance, except, probably, the fact that the main origin of the disease in the United States is from Texas cattle driven north; and, again, from the enlarged spleen found on microscopical examination arises the term Splenic Fever. In fact, the nomenclature is as extensive as the supposed causes advanced. My observations in this disease are confined to three outbreaks I investigated in the State of California.

The first outbreak occurred in October, 1888, and was a very serious affair, one "rancher" losing 700 out of a herd of 1,200, and this mortality occurred in from three to four weeks. I made six full autopsies during this outbreak, and cut open about fifty other carcases, simply to observe the condition of the liver and spleen.

In November and December, 1888, I investigated the second outbreak, and made four full autopsies. In February, 1889, I made my third investigation, and performed ten autopsies. It was during this outbreak I obtained the first cultivation on gelatine and agar-agar. I could not define any distinct organisms, as my highest power was only an eighth of an inch.

I made my last examination at a dairy within the city limits of San Francisco, in October, 1889, and as I had now obtained a one-twelfth oil immersion lens, I was able to make a thorough

* A lecture delivered to the final year's students at the New Veterinary College, Edinburgh.

examination of cover-glass specimens, as well as to obtain several cultivations, further mention of which will be made later.

There are numerous theories and causes assigned for this malady. Billings says, "It is an extra-organismal infectious septicæmia;" and Dr. Smith, in the VETERINARY JOURNAL for March, 1890, says, "It is an infectious disease of the malarial type," and attributes the cause to intra-globular bodies causing disintegration of the red blood corpuscles.

Billings, in his work, claims the cause to be an ovoid-belted organism, and gives experimental inoculation in support of his assertion.

Dr. Smith says he inoculated rabbits, and they remained healthy; but again Billings, on page 125 of his work, says "he found rabbits to possess natural immunity to at least half cc.m. injections; the same author supplies a whole list of experiments in support of his theory (see page 123 of his report).

In October, 1889, I obtained some cultivations on sterilised gelatine from the liver and spleen of a well-marked case of Southern Fever. Those (cultures) from the liver developed splendidly, but those from the spleen remained negative. The cultures from the liver did not liquify the gelatine, and presented a yellowish colour at first, becoming darker as they grew older. I also obtained two cultivations from the liver on the white of eggs, sterilised, as described by Billings on page 189 of his work on "The Cornstalk Disease."

In cover-glass specimens from the cultures, as well as from the liver, spleen, and gall-bladder, an organism similar to that described by Billings was observed staining most distinctly with Johne's fuchsin. Having inoculated some oyster *bouillon* from one of the culture tubes, a mouse was inoculated with two minims of this *bouillon* on the inside of the thigh on the 31st October, 1889, at one p.m. It was blowing and very uneasy that same evening, and died next morning about nine o'clock. Autopsy as follows: Blood bright-red colour, spleen and liver both enlarged, gall-bladder full of thick gall, lungs hyperæmic, and a clot of blood in the heart; cover-glass specimens showed the same germ as was present in the fluid from which the mouse was inoculated.

A cultivation was also obtained from this mouse's liver, which developed exactly the same as the original one. From this cultivation a rat was inoculated, and in about twenty-four hours it went off its feed, and exhibited signs of great distress, the respirations being very much accelerated; but unfortunately my dog, springing the irons of the trap, allowed it to escape, and I was reluctantly obliged to await another opportunity.

Having obtained the above results, I was naturally inclined

towards the theory advanced by Billings, in more ways than one. Our experiments and results were somewhat identical. Billings inoculated his mouse from a culture obtained from a manure-pad, and the mouse I inoculated was from a culture from the liver. Again, Billings failed to get a cultivation from the spleen, and tubes I inoculated from the splenic pulp also remained negative. However, this similarity of experiments on my part may be premature, as I did not have the opportunity of inoculating any cattle, which Billings, on page 125 of his work, states he accomplished successfully.

The next question to occupy our attention is how infection of pastures occurs, and what is the chief medium. Here, again, a difference of opinion seems to exist.

Detmers is answerable for the saliva theory.

Gamgee, in his report of 1871, p. 118, says: "It is not the breath, or saliva, or cutaneous emanations which are charged with the poisonous principle, but the fæces and urine."

Billings, on page 120 of his work, offers practical evidence that the manure must be the chief medium by which infection of the land occurs, and further states, "if fresh manure was rendered earthy and exposed to a high summer temperature, the germs would rapidly develop in it and gain in virulence." Again, Billings found (on page 120, *ibid.*) that *bouillon* cultures, made from the mixture of earth and manure, instead of containing a mixture of micro-organisms, contained almost exclusively the germ already described by him as occurring in the tissues, and also a few rods of other species.

I obtained almost a similar result in putting a small piece of manure from a pad, found in the yard where the outbreak occurred in San Francisco, October, 1889, in a tube containing oyster *bouillon*, and allowing the same to remain for a few days; it became turbid, and cover-glass specimens revealed an ovoid-belted organism, as well as others. But I did not make any plate cultures, not having the necessary appliances at hand.

From whatever cause it arises, whether it is the saliva, urine, or fæces, one fact remains, and that is: southern cattle, driven north during certain months, infect the northern pastures; in fact, southern cattle are simply the conveyers of the *inficiens* from southern to northern lands, and, when this poisonous principle is entirely eliminated from their system, they are then unable to cause any infection of northern pastures, and hence of the cattle. The average period between date of arrival and first notice of disease in northern stock is $55\text{-}\frac{80}{100}$ days (Billings). My experience in California shows a shorter period to have been the case, which can be explained if we accept the following: "So long as the pad

dropped by cattle (Texas or native) remains moist, soft, and cohesive, there is no danger to native cattle placed upon the pastures where such cattle have been" (Billings).

Now, it is well known that excessive heat exists in Southern California, also dry winds. Now, given those conditions it is certain that the pad would become dry very soon, and, assuming the virus to be there, it should certainly become disseminated very quickly, and thus account for the short time between date of arrival and first signs of infection. Billings (page 120, *ibid.*) says it only takes twenty days to cause it after infection has taken place. Rain also plays a prominent part in the extension of this disease, because, during the spring of 1889 in Southern California, whilst investigating that outbreak, we thought the mortality had ceased (it was not of a severe type, and there were numerous recoveries), when an old Spaniard informed me, "if rain comes, there is a chance of losing nearly the whole herd." That same evening and night it rained heavily, and the next few days we had extreme heat, and the cattle seemed to have picked up; but in four or five days they commenced dying in greater numbers than before, and the disease was in a much severer form, while the symptoms and course was very short, death occurring mostly during the stage of active infection. I was not able during this outbreak to obtain any cultures, as all my tubes were broken during transit; but cover-glass specimens were obtained, and on staining them with Johne's fuchsin an ovoid-belted organism was found to be present.

Concerning the communication of this disease from native to other native cattle, diversity of opinion again exists. The following authorities have expressed themselves upon this subject:—

No. 1.—The Metropolitan Board of Health of New York City. They say, on page 1,047 of their Report, "That the evidence of the contagion of the Texas Cattle Disease being communicated from native to other native cattle in this group is beyond a doubt." N.B.—This group means an infected herd.

No. 2.—Dr. John H. Ranch says, "With regard to the transmittal of this disease by native to other native cattle, I must confess that, notwithstanding the weight of testimony against it, I am inclined to believe that it can and does take place."

No. 3.—Dr. Salmon says, "In my own observations I have generally found that sick natives were harmless; but there seem to be occasional instances, particularly where they have been pastured on infected lands, in which they carry the poison and infect lands that were previously safe."

No. 4.—Billings claims that native cattle in Nebraska transmitted the disease.

My own observations in Southern California go to prove that

certain parts of that State are permanently affected, and cattle taken from them to other parts of the State will produce as deadly a form of Southern Fever as Texan cattle; and, moreover, native cattle, when brought into one of those ranches, become affected, and invariably die. Again, it must be remembered that the winter on those ranches is not severe enough to kill the germs which were brought there in previous years, and thus it again breaks out in the spring with greater severity, and, as already mentioned, is specially active after rain. This goes to prove a state of permanent infection, which I am of opinion exists.

Symptoms.—The symptoms, according to Gamgee, manifest themselves in four stages: 1st, Incubative stage; 2nd, period of active infection; 3rd, congestive or bleeding stage; 4th, termination.

In considering the intra-vital phenomena, it must be understood that the period of active infection is indicated by rise in temperature, which varies from 103° to 107·8° Fahr.; this period, extending from four to seven and eight days, is seldom observed except in thoroughbred cattle and dairy stock, which receive daily and personal observation. On ranches the first symptom is generally one or more dead animals. Then, by close observation, you will find animals showing the following symptoms: Drooping ears, sluggish movements, going lame of one or both hind limbs, secretions retarded, especially in milch cows, but appetite and rumination continue at first. The disposition to isolate themselves and seek mud-holes and low scrub to lie down in becomes apparent (so much so that one rancher told me it was the bush ticks that killed his cattle by sucking the blood out of them). Of course, it is well known that, given a debilitated condition of the system, all parasites as a rule take possession. Cough sometimes appears early in the disease; arched backs, hollow flanks, tendency to draw the hind legs under the body, knuckling over at the hind fetlocks also appear as earlier symptoms. The skin is dry and attached. The fæces in some cases are not affected; in others constipation, and again diarrhœa, is often a primary symptom, and the discharges are usually mixed with blood.

The urine is sometimes at first clear; again, hæmaturia is sometimes one of the first symptoms observed (and owing to this symptom Southern Fever may be, and often is, confounded with Splenic Apoplexy, and also with Hæmo-albuminuria); but again, the urine may retain its normal characters throughout the whole course of the disease, except in the presence of albumen, which I invariably found in any urine I tested, but of course in greatest quantities when hæmaturia was present.

The condition of the pulse, which I was only able to observe

satisfactorily in a milch cow, was *pulsus frequens*, and then gradually becoming more frequent, and towards death it was almost impossible to feel it.

The temperature, as already mentioned, high at first, becomes reduced with the approach of death. The external temperature of the body varies. Polls, ears, and horns hot during the active stages of the disease, and at other times cold, particularly the posterior extremities. The respirations are accelerated, sometimes as high as 100 per minute, and during the last stage, when coma is present, they become slow, laboured, and deep.

Percussion reveals dulness on the inferior part of the chest, and auscultation increased sounds, and friction sounds when the pleuræ are affected, which is often the case.

Trembling of the muscles of the posterior part of the body, and also of the neck, accompanied with weakness across the loins, takes place, and the animal cannot get up, and if it does it walks with a tottering gait. In milch cows the secretion of milk is almost entirely suspended.

Again, in rare cases the febrile symptoms subside, the secretions again become active, urine clear, and the animals recover within a few weeks. Again, others show improvement, but the febrile symptoms, accompanied with diarrhœa, suddenly reappear, and death occurs in from thirty-six to forty-eight hours. I have observed numerous cases of this kind.

Again, you will find affected animals lying down, and not so weak as one would imagine; one case of this kind I noticed particularly. We caused the animal to get up, and drove it down to an open spot, intending to take the temperature, when suddenly, after going a few yards, it fell down and expired with a few convulsive kicks. (The owner of the ranch informed me that in rounding up and bringing in the sick animals a great many fell down and died in a similar manner.)

Others, again, when the brain is affected, become delirious, and will charge you, a symptom I also observed in Splenic Apoplexy during the outbreak on the Missouri River at Sioux City in 1886.

Post-mortem Lesions.—In describing the *post-mortem* phenomena, it is necessary to draw from several autopsies in order to get a direct chain of lesions likely to be found.

On cutting through the skin to remove the fore limb, prior to laying open the left side, the first thing that is noticed is the escape of a bright, brick-red coloured, very thin blood, which seemed to coagulate more rapidly than normal blood; the flesh, in the majority of cases, was of a bright-red colour, and the fat between the muscles, as well as that of the areolar tissue, of a deep brownish colour. I generally next cut along the abdomen, removing the

whole of the left flank, as well as the ribs, thus exposing the thoracic and abdominal cavities, when the first thing that attracted attention was the enormous size of the spleen. I have two measurements, as follows: (1) Two-year-old heifer, nineteen and half inches long and sixteen inches in circumference; (2) four-year-old cow, length twenty-four inches and sixteen inches in circumference. Having no scales, I did not obtain the weights; but others give records of it weighing as high as 10 lbs. I have seen others longer, but did not make any measurements. It has a dark purple colour; sometimes the capsule is studded with petechiæ, and sometimes it is not. On section, the splenic pulp consists of a disintegrated mass, having lost all consistency, pressure causing light-red blood to escape. Having removed the spleen, we next examined the four compartments of the stomach *in situ*, which will be found, as a rule, normal, as also their attachments, except, perhaps, a brownish-yellow colour of the omentum. On section of the rumen, it is found full of food, and its coats healthy.

The Reticulum. Sometimes healthy, and, again, it may be the seat of red imbibitions.

The Omasum. In some cases the contents of this compartment were harder than usual, and in others it was healthy.

The Abomasum is always the seat of distinct and pathognomonic changes. The mucous membrane often has a pink or dark-red colour, and minute ecchymosis stud its surface, and erosions of the epithelium are also of frequent occurrence.

The Duodenum is sometimes of a deep-red colour, and the mucosa deeply tinged with bile, especially close to the pylorus. Jejunum, frequently reddened, and circumscribed hæmorrhagic centres are often seen.

The Cæcum and Colon are generally the seat of more or less ecchymosis.

The Rectum is generally of a red colour, and, when diarrhœa is one of the symptoms, the mucous membrane is the seat of extensive hæmorrhages.

The Liver. This organ is the most affected of any in the body, and the condition of it may be said to be diagnostic of Southern Fever. It is always enlarged, and in most cases enormously so, the records showing it to have weighed 20 lbs., and in one case 27½ lbs. In colour it is light brick-red, inclining to a dark yellow, almost resembling powdered cinnamon. On section it was generally fatty, and light red-coloured blood escaped, as well as an excess of bile. Under the capsule yellow streaks could be seen, some as large as straws, due to engorgement of the bile-ducts; microscopical examination of a section of such reveals a condition of natural injection of the gall capillaries.

The Gall-bladder was in all cases more or less distended, and in some as large as a urinary bladder. The record shows it to have weighed 4 lbs. Its walls were hypertrophied and full of gall, sometimes of a dark yellow, and again of a dark green colour, almost black ; sometimes slightly inspissated, and again so much so that it resembled boiled starch in consistency.

The Kidneys were usually of a dark brown colour from the intense congestion, in some cases they were enlarged, and in others not ; however, there was always more or less parenchymatous degeneration present, and diffuse capillary engorgement. The cortex was softer than usual, and numerous petechiæ could be seen throughout its substance ; in some cases pus was present in the pulvis, and in others a thin yellow exudate ; the fat of the kidney had the same peculiar yellow colour already described.

The Bladder was usually distended with bloody urine, and in such cases the mucous membrane was more or less congested. The urine never coagulated spontaneously, but only under the action of heat and nitric acid. I have found the bladder enormously distended with urine. Billing says "it sometimes weighs ten, twelve, or fourteen pounds ; this, too, when the animal has urinated immediately before, or in the act of death." Same authority says, "Cows in calf have always retained the fœtus, whether it was two days or several weeks old." No cases of abortion were observed in Southern California from this cause, but *post-mortem* examinations sometimes revealed the peritoneal surface of the womb studded with ecchymosis.

In one case, whilst removing the diaphragm, the posterior aorta was cut, and thin, bright-red blood escaped, which formed a clot, resembling red-currant jelly ; and it was so tenacious you could take it up and let it fall, and it would still retain its consistency, and would also leave no stain on your hands.

The Lungs. In some cases they were emphysematous. In others Broncho-pneumonia was present. Again, some—in fact, all—presented, more or less, hypostatic Pneumonia, due to weakness of the heart and kidney complications. Pleurisy was also present in some cases.

The Heart. This organ was generally normal, except from organic disease, but the pericardium was studded with petechiæ. The fat around the heart had the same peculiar colour already mentioned.

The Mouth, Pharynx, and Œsophagus were always normal, but serious infiltrations and hæmorrhages were sometimes found beneath the skin of the lower jaw and neck.

The Cranial Cavity. I only removed the brain of one animal, and it was delirious before death. I found the dura and pia-

mater covered with ecchymosed spots, and the cranial vessels congested, and the cerebellum also slightly affected. In bad cases this would account for the loss of co-ordinates of the muscular movements of the body. Concerning the lesions of the nervous system, Billings says, "In cases where partial paralysis alone of the hind quarters was marked, on examination of the spinal cord the upper cornea of the grey matter in the lumbar region was reddened. Microscopically it showed blood extravasation and straining of the nerve cells. In general paralysis the same appearance could be traced, more or less, throughout the whole length of the spinal cord.

Treatment is useless, as nearly all affected animals, unless they have it in a very mild form, die. Again, a good many remedies have been recommended, and, no doubt, when any good results were obtained, the supposed recoveries might have done as well without any medicinal aid. I tried several things, but supposed the best results were obtained from large doses of linseed oil and croton beans. Some consider calomel almost a specific. Carbolic acid, sodium sulphite, and quinine are also recommended.

Differential Diagnosis.—Southern Fever may, and often has been, mistaken for Splenic Apoplexy, and *vice versâ*. The distinguishing features are many. In Splenic Apoplexy the animal may be well the night before and dead next morning. In Southern Fever this is seldom the case, the symptoms running a longer course. In both diseases hæmaturia is present, as well as bloody diarrhœa, but in Splenic Apoplexy the mucosa of the anus and vagina is more or less everted and covered with dark ecchymosed patches. The mucous membrane of the eye in Splenic Apoplexy is heavily injected, and in Southern Fever it is sometimes of a yellow colour. Again, in Splenic Apoplexy the mucosa of the mouth and nostrils is also injected and covered with ecchymosis, which is not the case in Southern Fever.

In Splenic Apoplexy the heart beats with violence against the thoracic walls, while in Southern Fever the heart is weak and the pulse frequent and sometimes wiry. On *post-mortem* examination there will be found in Splenic Apoplexy dark, tarry, uncoagulable blood, as compared with the bright-red, coagulable blood found in Southern Fever. In both diseases the liver and spleen are enlarged, as well as the kidneys, but the liver in Splenic Apoplexy has not the streaky appearance found in Southern Fever, and, moreover, is of a dark-brownish, blue colour, and on section dark blood will exude. The splenic pulp in Splenic Apoplexy is entirely disintegrated, and, on holding up the spleen by one end, the pulp will fall down to the other like a sand-glass. This is seldom the case in Southern Fever, the pulp still retaining its integrity until

the capsule is cut. The kidneys in Splenic Apoplexy are highly congested as well as friable, and contain petechiæ, and are full of dark, tarry blood, which is not the case in Southern Fever, and no pus or serous fluid is found in the pelvis, as in Southern Fever. In Splenic Apoplexy the endocardium contains petechiæ, which do not wash off; but in Southern Fever I found petechiæ on the pericardium only, and not on the endocardium. Lastly, the microscopic examination is decisive. In Splenic Apoplexy you will find, on staining cover-glass specimens, the Bacillus anthracis, and in Southern Fever (at present undecided), by using Johne's fuchsin you may see the ovoid-belted organism described by Billings.

Southern Fever has also been mistaken for Hæmo-albuminuria (Red Water). In the VETERINARY JOURNAL, December, 1889, under "Notes and News," we find the following: "Texas Fever. What was called Red Water, but which, we believe, was Texas Fever, caused the death of 119 head of cattle out of 770 on board the ship *Oxenholme*, which arrived at Liverpool, from Boston, lately." I quite agree with the VETERINARY JOURNAL's belief, because, if it was Red Water, isolated cases might occur, but not 119 head. However, the slaughtering, on arrival at Liverpool, ought to have decided the question, as I have no doubt, when the mortality was so great, a few enlarged spleens and livers would have been found among the survivors.

"Big milt," as they call such cattle at the San Francisco slaughter-houses, are often eaten in that city without any apparent serious result. Red Water being divided in two kinds—(1) parturient and (2) non-parturient—it becomes an easy matter for the practitioner to find out the first form by the history; and again, in this disease you have "irregularity of the heart's action, accompanied with a peculiar trembling or thrilling of the pulse" (Williams). This symptom is absent in Southern Fever. The *post-mortem* of Red Water reveals general anæmia; this is not the case in Southern Fever. Again, softening and engorgement of the liver occurs in both diseases; but in Red Water absence of an enlarged spleen, as well as the yellow streaks under the capsule of the liver seen in Southern Fever, should certainly prevent further doubt.

This concludes the list of diseases that I have both seen and heard of as being mistaken for Southern Fever.

ŒSTRUM IN SPAYED ANIMALS.

BY H. LEENEY, M.R.C.V.S., EAST GRINSTEAD.

I HAVE read Fleming's "Veterinary Obstetrics" with much interest and profit, and on several occasions the information contained in it has been of much service to me in enabling me to do what experienced cowmen could not accomplish. But this is only *inter alia* to my present subject, and is merely an acknowledgment by one practitioner of the benefits derived from the work. What I desire now to refer to is the occurrence of œstrum in spayed animals.

I cannot understand how it is that spayed bitches and cats show regular periods of œstrum, *unless operated upon when pregnant.* I do not find this explained by Fleming or any other author, and I would respectfully suggest some allusion to the fact in the next edition of "Veterinary Obstetrics." Of course, I know the farrier's tradition that a bitch should go to the dog ten days before she is spayed, but I have never met a farrier who *could*, if he *would*, offer me any explanation of it. I assumed (wrongly) that he desired pregnancy in order to give greater substance and toughness to the uterus, which always requires a good deal of force to pull out, and avoid breaking off the ovaries.

I have conclusively proved that, however "cleanly" spayed a bitch may be, she is liable to œstrum if not pregnant at the time she was operated upon. Of two bitches spayed by me for a surgeon at East Grinstead, the first came on "heat," and to use the owner's own words, "she took all the dogs in the parish." The case of the second bitch was similar; to satisfy the surgeon that the operation was thorough, I sent him the ovaries and both horns of the uterus, and yet œstrum appeared, and she did exactly as the other animal did. A third bitch belonging to another person also copulated freely after being spayed.

I have operated upon maiden bitches, and they have *not* exhibited signs of œstrum, but the foregoing is sufficient proof that the operation is not satisfactory in its results unless it is performed in early pregnancy.

The same remarks apply to cats, though to a lesser degree, the examples being but few among a large number of subjects. To one cat that was sent to me to be killed because she was just about to kitten, I gave chloroform and performed Cæsarian section, and since then the man I gave her to came here to tell me that he would shortly give me one of her kittens, as he had seen her copulate. In this case I took away all the body of the uterus and one ovary, so that I am not surprised that she showed signs of œstrum. I thought I was going to have a grand

example of extra-uterine fœtation, but nothing came of it, and the man tells me "she spreads on her back and takes the Tom every three weeks regular."

My medical friends inform me that it is not rare for women to menstruate after ovariotomy has been performed upon them, but in their case only the ovaries and Fallopian tubes are removed, whereas in cats and bitches the uterus is divided just in front of the os.

A CASE OF HÆMATOMETRA IN THE BITCH.

BY R. W. BURKE, F.R.C.V.S., ARMY VETERINARY DEPARTMENT.

THE evil results of the above-named affection are innumerable, and, as we all admit, in many cases exceedingly dangerous. One of the commonest, but least suspected, sources of danger is, we are convinced, inattention to the question. What is the proper course of treatment to be adopted in the early stages owing to failure in diagnosis? In consequence of the subject of "dropsy" being so complicated, it is not possible to lay down rules applicable in all cases. Every disorder and every variety has to be dealt with on its own merits, and special remedies must be provided in the cases calling for them. Just to show how pressing is the necessity for improvement, and how important the necessity for careful diagnosis, I shall briefly allude to a few facts connected with the history of a case I have recently witnessed. Anyone acquainted with the subject could multiply such cases; nor is there anything extraordinary in the instance I bring forward, except to show that we do meet with such cases in practice. A few weeks ago I was consulted with regard to a well-bred St. Bernard bitch belonging to a friend. Inquiry revealed that the animal was previously treated by veterinary surgeons, without obtaining any relief, and had been pronounced incurable; while one practitioner had prognosticated "death within forty-eight hours," and recommended that the animal should be destroyed. The owner was both frightened and displeased at such stern prognoses, and consulted me only in despair. The case was described as one of "chronic dropsy," and I was asked if such a condition was dependent on heart mischief.

I carefully examined the animal and found a symmetrically enlarged and distended state of the abdomen, accompanied with a very fœtid, sanious discharge from the vagina, causing marked debility. The heart-beats were found to be irregular, which I attributed to pain from uterine disorder. No evidence of abortion was forthcoming in the case under observation, nor did the animal appear pregnant, from her history and my examination. I there-

fore decided that, in any case, whatever else there was retained it ought to be removed as early as possible. I prescribed the the following treatment:—

℞ Ext. Ergot Liq. m.x.
Tinct. Digital. m.v.
Potass. Iodid. grs. x.
Aquam ad ℥i.
℔ ft. haust. Bis in die.

With regard to the local treatment, I recommended carbolic water injections *per vaginam* twice daily.

I saw the case again on the third day, and noticed a singular abnormal discharge present, which was purulent and highly septic. I ordered the above treatment to be continued, and before the end of a week found the abdominal enlargement reduced to normal size and all discharge entirely stopped. The same treatment was recommended to be kept up for another week or ten days, to be followed by ten grains of idodide of potassium daily until my next visit. At the end of about three weeks I was informed personally by the owner that his dog had entirely recovered, to his great astonishment; then I saw the animal for the last time and gave a satisfactory opinion, recommending the idodide of potassium to be given whenever any unfavourable symptoms made their appearance in the future.

The above pathological condition was evidently one of secondary Hæmatometra, characterised by bloody and purulent discharge, supervening on Hydrometra, the result of Metritis and hypertrophy of the walls of the uterus.

All these suggestions, however, must be received with caution, although the progress of the case would preclude the possibility of the existence of cancer or fibrous or other tumours within the uterus. These different conditions are all more or less chronic in character, and each of them may be attended with more or less profuse loss of blood.

INFLUENZA.

BY G. J. R. RAYMENT, A.V.D., NORTH-WEST PROVINCES, INDIA.

In the Veterinary Journal for April last, a meeting of the Lincolnshire V.M.S. is reported, at which a most interesting and instructive discussion on this disease took place. Professor Pritchard (one of whose pupils I had the good fortune to be) was of opinion that no connection existed between the human and the equine forms of the disease; while other members of the Society were either doubtful, or inclined to believe in its com-

municability from the horse to man. As there seems to be some uncertainty on the point the following may prove interesting to the profession in England.

I am at present travelling in the Kumaon Hills, to investigate, for the Government of the North-West Provinces, an outbreak of Cattle Disease (Rinderpest). Human Influenza is raging in every inhabited valley and on every hill in the country. In some places I had great difficulty in obtaining coolies to carry my kit from one stage to another. The tea planters have been at their wits' ends to get labour for their gardens. Yet, although I have visited any number of villages and several tea gardens during the past fortnight, I have not seen a single case in the numerous ponies and mules I have come across; and both Europeans and natives informed me that not an instance of the disease had occurred amongst animals. Again, I am in charge of some 4,000 brood mares, scattered over the North-West Provinces, and my native assistants would report to me any outbreak of Influenza amongst them or their produce; but although the disease exists in many places amongst men, no report of any outbreak amongst horses has reached me.

It seems to me that "la grippe" is not communicable from the human subject to our patients, and, *ergo*, not communicable from them to us.

CASTRATION.

BY F. FOSTER, M.R.C.V.S., 10TH UNITED STATES CAVALRY, FORT BAYARD, NEW MEXICO, U.S.A.

In the Journal of May, 1890, I noticed an article on "Castration," in which Mr. Cooke states that he finds the "Ecraseur" a slow and cruel instrument, and that the operation can be performed much faster with the cautery. Having performed the operation by most of the methods laid down for castration, I have found the "Ecraseur" the best instrument for the purpose, especially "Sheffer's improved Miles' Ecraseur," manufactured and sold by Haussman, McComb, and Dunn, 122, Randolph Street, Chicago, U.S.A. The advantages offered for the above over the old Miles' instrument, is an improvement consisting of an arrangement by which the slack of the chain is taken up at once, instead of waiting until it comes into contact with the cord, which makes it possible to operate much faster than with the Miles' instrument, and safer. The head is arranged so that hæmorrhage is impossible. To insure success, all that is required is to avoid unnecessary haste in severing the cord. In the animals which I have operated upon

I have had no trouble whatever—no bleeding and very little tumefaction. In castrating with the Ecraseur, I have not had any trouble in after treatment. On the second day after operation, I have the animal led out in hand; this is continued for a week, and at the end of that time there is no sign of swelling. In the United States the Ecraseur is the popular instrument, and from what I have seen I think it justly deserves first place in the catalogue of castrating instruments. In my remarks I do not wish to condemn any veterinarian's method of castration, but merely wish to come to the rescue of the Ecraseur.

MALARIAL FEVER AMONG HORSES IN INDIA.

BY R. W. BURKE, F.R.C.V.S., A.V.D.

(*Continued from page* 400, *vol. xxx.*)

We have other accounts of the disease by Pilizzavi* (Febris quotidiana bei einem Pferde, Heilung durch Chinin); Bertocchi† (Quartana beim Pferde, 4 Tage hinter einander Morgens von 8-12, Heilung durch Chinin); Lessona (beim Rind mit 1 u. 3 tägigem Typus, ebenso beim Pferde, Behandlung mit Chinin, 1855); Albenga (Quotidiana bei zwei Rindern in sumpfigen Gegenden, Heilung mit Chinin, 1857); Sonin‡; Allard,§ and others.

Symptoms.—The first or primary symptoms are generally those of languor and fatigue; the animal presents a sluggish gait, frequently hangs its head and refuses food. In a few cases shivering fits are remarked at the onset, and the breathing is noticed to be slightly hurried. The shivering may recur in some, though not in all cases, during the course of the disease. The temperature is found to be 102° F., if taken at the onset, and rises to 103° F., 104° F., or even higher. It descends in a few hours to 102° F., and may even come down to normal point, with complete cessation of all febrile symptoms. The pulse and respirations will be increased accordingly. The cases linger to several days, and show an apparent improvement, but again manifest acute symptoms. In other cases, on the temperature being taken, it will be found to have risen four, five, or more degrees above the normal, and to be maintained high throughout the course of the disease, with fluctuations. Frequently there is no regularity in the rise and fall of temperature.

The urine is always albuminous in character, and frequently

* La Clinique vétér. de Lyon, 1847.
† Giornale di Veterinaria, 1853.
‡ Ref. im Jahresb. von Ellenberger u. Schütz, 1883.
§ Wehenkel's Jahresbericht, 1883.

contains tube-casts. When there is blood in the urine, the act of micturition is often more frequent than at other times.

The cases linger to several days, and show an apparent improvement ; but again manifest acute symptoms.

Thirst is sometimes present, attended with severe diarrhœa.

Owing to a sustained high temperature in this disease, the animals rapidly waste and become lean, presenting that appearance in a few days which is seen in other wasting disorders only after weeks of illness. Convalescence is protracted. The disease leaves the animals so weak that they seldom rally in the great majority of cases, ultimately succumbing to exhaustion.

Paraplegia, pronounced Stringhalt, muscular tremors, crossing of the legs, etc., develop during the course of the disease, due to effusion on the spinal cord and on individual nerves.

Necropsy.—The blood is dark and viscid, in some of the larger vessels forming into distinct, long clots. It is not unusual to find ecchymoses in the subserous and submucous tissues. The walls of the heart are soft and flabby, and the pericardial sac contains an excess of serous fluid. The lungs are the seat of congestion and catarrhal inflammation, being large and increased in weight, owing to consolidation. The stomach and intestines show petechiæ and congestions, erosions, sloughs, and deep excavated ulcers of various forms and extent. The liver is often enlarged and increased in weight, soft and friable. The spleen is also sometimes enlarged, though not always. In those cases in which paralysis of the hinder quarters or other nervous symptoms are well marked, the grey matter of the cord generally shows blood extravasations and staining of the nerve cells ; but beyond a tendency to congestion and occasional blood extravasation, no lesions are usually discovered in the nervous system.

Microscopically examined, the blood shows the presence of white cells in excess, with destruction of the red corpuscles, and the presence of numerous infusoria in various stages of development, and sometimes also bacterial forms.

Diagnosis.—Digestive lesions, both in the stomach and intestines, are found to be common in almost every case, and are characteristic of this disease. (2) Pulmonary complications frequently exist. (3) A symptom to which special attention should be directed is motor disturbances. The motor affection is shown by the frequent paraplegia and twitching and spasms of the muscles ; it affects the muscles of the hind legs in particular, producing Stringhalt, unsteady gait, etc. The mortality also is usually high. Features allied to the above are not uncommonly noted in the remittent fever of human beings. The diagnosis may not be easy in a few complicated cases, but due observation of the peculiar

combination of symptoms will enable careful practitioners to make a good practical diagnosis.

Treatment.—A radical cure of this fever in a remittent type is beyond the power of medicinal agencies, but much may be done to increase the chances of recovery in many cases, and for this purpose we must bear in mind the complications, which are so common in this disease. One of the most important of these is the tendency to pulmonary catarrh, and frequent diarrhœa brought on from intestinal irritation. In all cases it is advisable to keep the bowels from becoming constipated by the administration of mild aperients. Nourishing and easily digested food should be given. Among the remedies that have been tried in the treatment of these cases, and found beneficial in some, we will mention sulphate of quinine, sulphite of sodium, antifebrine, antipyrine, and carbolic acid.

III.—Pernicious Anæmia.

Vulgar Synonyms.—Surra; Kákke; Panduwa, etc.

It seems to me that some word is needed to define the condition of the system which ensues upon the action of the parasite found in the disease, so as to get a better explanation of both cause and effect, and thus improve its treatment. I venture to think that both the public and the profession will better value and better understand our meaning if it be stated what the disease is, and if its place can be specially defined. If the proper place of this disease were well understood it would have a stronger tendency than anything else to the encouragement of progress in its pathology and treatment, especially upon points which have been under discussion for many years. There is every reason to believe that, in a few years, important changes will be effected in the nomenclature of animal diseases which once seemed complicated or obscure. The importance of correct nosology in disease it would be difficult to overestimate, not only on account of its bearings on pathology, but because of the influence of treatment upon our animals, should the nature of the disease be not rightly understood.

There can, I think, be no doubt that a revised nomenclature will be of service in connection with the theory of the pathology of "surra." This condition—which is attended by anæmia, pernicious and progressive; by a prolonged course, and more or less definite duration; by inordinate mortality; by paroxysms of increase of temperature, or so-called "anæmic fever"; and by leucocytosis, and other features essential to it—might, perhaps, be represented by pernicious anæmia, which shows the same features even in man.

We may summarise our reasons for considering this disease to be pernicious anæmia, thus:

Temperature.—A point of interest we have noted in the case of Surra in India, and other veterinary surgeons had done in that of pernicious anæmia seen in Europe, is the well-worn, but mysterious subject, the paroxysms of increase of temperature, the so-called "anæmic fever" of writers on pernicious anæmia in the human subject. Zschokke* also, it is well known, has assigned a prominent place to this fever in the horse, which he found to be of an intermittent type; and Fröhner† has likewise noted a marked rise in temperature on the fourth day, which, with slight remissions, remained high till death.

There was a time when the statement that a fever showed relapses was held to be a sufficient explanation of its nature. It is not so now, but the word still conceals a considerable amount of ignorance, or at least an imperfection in our knowledge of the diseases that are included under it. We must not restrict the term, in practice, to relapsing or famine fever, for the etymology of the word indicates such maladies as are characterised by relapses, and is often applied to all affections in which relapses in the fever are present. Thus, we have two classes of disease commonly called relapsing—a definite disease which has been described by Dr. Carter, and is known as relapsing fever; and diseases in which relapses commonly characterise the fever, as in some forms of acute rheumatism, in "Weil's disease," in essential anæmia, etc. I have, moreover, seen a few instances in which relapse was noted during the course of Anthrax Fever in horses, the term not being made use of unless there had been decided return of the symptoms of Anthrax and of bacilli in the blood, accompanied by a temperature several degrees above the normal. Veterinary Surgeon Hazelton, A.V.D., who lately investigated an outbreak of Anthrax at St. Thomas' Mount in Madras, practically confirms my observations relative to the temperature variations peculiar to Anthrax, and which I noted some years ago.

Duration and Course.—There are usually an unlimited number of relapses, the average duration of the disease being probably not less than two months; the average duration of the human disease (pernicious anæmia) being also estimated at two months. The average of twelve cases of Surra noted by Mr. Steel was over sixty-six days; that of several cases observed by Dr. Evans (Report on Surra Disease, 1880) was two months. It is seen that weak animals succumb sooner, and in some outbreaks the ordinary duration of the disease does not exceed from one week to a fort-

* Schweizer-Archiv fur Thierheilkunde, Bd. xxv., 1883.

† Archiv für Wissens. u. Prakt. Thierheilk., Bd. xii., 5 u. 6 Heft, 1886.

night, and frequently may be less in outbreaks in which reckoning was made *after* the date of admission on the sick report. A few cases have been seen to make slow progress in the disease for over a year. The most important feature of the disease is that there is no history of a definite onset, and that the condition is progressive.

Fatality.—This disease in the horse has been characterised as "invariably fatal" by more than one writer. There is probably no disease in which the fatality is so high as in pernicious anæmia.

Necropsy.—Inspecting Veterinary Surgeon G. Oliphant writes: "In one outbreak of Surra in the 18th Bengal Cavalry, in which 180 horses died, I made dozens of *post-mortem* examinations, and the appearances in all were identical—extreme pallidity of the tissues, with perhaps a trifling serous effusion into the abdomen, etc. In fact, the animals looked as if they had been starved to death." Dr. Evans, A.V.D., says: "I am prepared to state positively that this disease is not characterised by any structural organic change; it is purely a disease of the blood." Zschokke also states that "none of the principal organs show any marked structural change in pernicious anæmia in the horse." Mr. Steel lays stress on the presence of gastric ulcers as characteristic of Surra; and the relation of gastric ulceration to pernicious anæmia formed the subject of discussion lately at the Royal Academy of Medicine of Ireland. (*Lancet*, March 10th, 1888, p. 474.)

Appetite.—In spite of a greedy appetite, debility appears progressive in character. It is scarcely necessary to remark on the importance of this symptom in diagnosis, as all who have written on the disease lay special stress on it. Professor Fröhner has noticed it in the German type of equine pernicious anæmia; and Veterinary Surgeon John Cooper, A.V.D., who has only lately reported an outbreak of Surra among ponies in Berars, says that "the appetite is seldom quite lost, and sometimes an animal continues to feed up to the very last."

Influence of Season.—It has been seen that Surra occurs most commonly after the rainy season in India. There may be many local conditions—susceptibility of sex to climate, season, etc.—that may affect the greater prevalence of disease in males or in females, in different outbreaks. Dr. Moore, at a recent meeting of the Royal Academy of Medicine of Ireland, pointed out that season exercised a great influence on the occurrence of anæmia in the human subject.

Treatment.—I attached considerable importance to arsenic in the treatment of cases of this disease, with the view of comparing or contrasting the results with those obtained through the use of this

agent in pernicious anæmia, and in a back number of the *Quarterly Journal*, Mr. Butler, A.V.D., has reported most interesting results from treatment of cases of Surra "with arsenic pushed as far as possible." The cases were "doing well, not losing condition, and the temperature keeping down." This observation is worth noting, when we remember that arsenic is the only remedy of any value in cases of pernicious anæmia in the human subject.

Clinical History.—The clinical history of Surra in general is that of pernicious anæmia. The marked anæmic conditions, observed both *ante* and *post mortem*, the leucocytosis, the fatty degeneration of the muscles, liver, heart, spleen, and other organs, the general hæmorrhages, and the chronic state of fever, which end in death in so many cases, leave no doubt as to the nature of the disease.

From a comparative point of view, it is interesting to observe how the above manifestations of pernicious anæmia correspond with those shown in man, in whom the fatality, duration, and course, and other features peculiar to this disease in animals, are represented by so closely allied characters. The marked anæmia noted in Surra, the paroxysms of increase of temperature, the duration and course, and the extreme fatality, together with the history of the parasites seen in the blood, form a group of conditions sufficiently diagnostic of pernicious anæmia.

Editorial.

VETERINARY EVIDENCE IN COURTS OF LAW.

THE value of expert evidence is in direct relation to its trustworthiness, and this should depend upon the scientific knowledge, experience, and rectitude of the expert. Such evidence is usually sought in cases in which ordinary knowledge is not sufficient to afford all the information necessary to arrive at a definite and just conclusion, in a subject under investigation. Investigations of this kind may take place anywhere, but perhaps they are most frequently conducted in courts of law, where the expert is compelled to give his testimony on oath, and is therefore solemnly pledged to state what is really his belief, as a specialist, with regard to the matter upon which his assistance has been sought. The matter may be most complicated and difficult of solution, or it may be so simple that the views of the expert are scarcely needed except to make assurance doubly sure. In any case, he is called to assist in promoting justice, and his aid should be given conscientiously and truly, impartially, and to the best of his ability. But it must be confessed that only too frequently experts cut a remarkably bad figure in the witness-box, from the very contradictory evidence they give, and one is often led to conclude either that the branch of science they represent is in a most backward condition, or that some of the witnesses are very stupid or utterly unscrupulous as to the kind of opinion they give.

Veterinary evidence, if recent law trials are to be adduced as proof, is rapidly coming to be regarded as of little or no value, and in this way has already become a standing menace to the reputation of our profession; inasmuch as judges are not only disposed to ignore it altogether, but to make severe comments on the witnesses and the unreliability of their technical knowledge, at the same time deciding the cases before them on the testimony of laymen whom we should consider very unreliable persons indeed. It would seem impossible for veterinary surgeons to agree upon the most simple case which can be brought into a law court; for if half-a-dozen can be engaged for the prosecution, as many can be found for the defence. On points which one would think there could be no dispute about, we find the most contradictory opinions emitted and strenuously adhered to; whether a horse has or has not a splint, a spavin, a ringbone or any other defect visible and accessible to the touch, may any day be the cause of conflicting statement by experts, and a source of annoyance and bewilderment to the judge who listens to them. Things which should admit of no dispute whatever are a perfect bone of contention in the witness-box, and the result is damaging to the good name of our calling and can only be productive of harm.

Take the trials which occur so frequently with regard to soundness

in horses, for instance, or those which have reference to cruelty to animals, and we have at once examples of the length to which divergence of opinion can go. One example is given in the present issue of the Journal, and the remarks and action of the judge are only a repetition of those with which we have become so painfully familiar in similar cases. Not long since a knacker was convicted in London for gross cruelty to a horse and sentenced to a term of imprisonment. The animal had been sold to him by a cab-owner, because it was very *lame* from abscess or fistula in a *fore foot*. Instead of killing the poor brute on the premises and carting away the carcase, the knacker travelled it on a dark night to his establishment, a distance of seven or eight miles, and witnesses saw it when within two miles of its destination, walking in the most painful manner and steaming with perspiration. Next morning a policeman found a horse's foot (not a hoof) near where the animal had been seen the previous night, and by splashes of blood the horse was tracked to the knacker's yard, where it had just been killed. The limb, minus the foot, was in a very bad condition, being swollen as high as the knee and much contused. The hoof contained the pedal bone, which was fractured into several pieces. Grit was imbedded into the articular cartilage on the lower end of the os coronæ, showing that the horse had placed it on the ground. The knacker appealed against the decision of the magistrate and the case was reheard in a higher court. The defendant, it was rumoured, was not a poor man, and money would obtain him an acquittal. Veterinary surgeons appeared for the prosecution and gave it as their opinion that it was a case of gross cruelty; a larger number were engaged by the knacker, and swore that the horse suffered no pain at all—this opinion being based on the assertion of the owner of the horse, that it had been neurotomised three years before—but these experts had no other proof, and they had not seen the foot or limb. The horse had been sold to the knacker because it was *incurably lame in the foot*. The judge, after making the usual disparaging remarks as to the value of the scientific evidence, put this altogether out of consideration in the case before him, and concluding that the knacker did not know the horse was going lame (!), reversed the magistrate's decision, acquitting the knacker.

This state of affairs is very discreditable to our profession, and it is all the more painful to its well-wishers when it is rumoured that expert evidence, for or against, in any law case can be purchased for money. It is not for us to say what personal motives may induce or impel veterinary surgeons to give technical evidence on oath, but certain it is that such evidence should not be influenced by monetary or partisan views; but should be given conscientiously and truthfully, according to the facts presented. To aid in defeating justice is what no honourable man would descend to; and no greater injury can be inflicted on the veterinary profession than is caused by contradictory expert evidence in law trials. When judges cast such evidence to one side as worthless, and accept that of laymen who are perhaps themselves personally involved in the issues, it must lead the public to ask

whether we know any better about our business than those who do not claim to be specially enlightened.

Surely such painful scenes in the witness-box might be avoided if care were taken to be assured of all the facts, and to examine them according to scientific teaching. The Royal College would render a great service if it would take this matter of expert evidence in hand, and attempt to devise some way in which this grave disgrace might be abolished. Surely an expert should be held responsible to his profession for the opinions he emits in a court of justice! The public looks to our Corporation for protection against unprofessional conduct in law courts, as well as elsewhere.

THE EPIZOÖTY OF MANGE IN QUEENSLAND AND NEW SOUTH WALES.

THE extraordinary outbreak of Scabies among horses in the Colonies of Queensland and New South Wales, has received a large amount of attention from those chiefly concerned, and especially from the Colonial Governments. We learn, from a report by the Chief Inspector of Stock, Mr. P. R. Gordon, to the Colonial Secretary of Queensland, that the disease is disappearing from the districts it first visited, and that, too, among animals which had not been submitted to medical treatment. From inquiries instituted by Mr. Gordon, it results that the cutaneous affection was widely distributed—extending from the shores of the Gulf of Carpentaria to the Tweed River, and for many miles south along the New South Wales coast; while in another direction it prevailed from the eastern seaboard westerly, to the 146th degree of longitude. It appeared in a more virulent form on the coast watershed than west of the main coast range—a circumstance attributable, it is noted, to the greater humidity of the atmosphere; it also assumed a more virulent character in the northern coast districts than in the south.

Doubt still seems to exist as to whether the parasite was animal or vegetable, but it is remarked that in scrubby country, where the atmosphere and other surroundings are most favourable to the development of fungoid growths on plants, the affection was much more severe, and was less amenable to treatment than in open country, and it was in such localities that it appeared to any extent in cattle. The only instance in which it manifested itself in sheep was in the Fassifern scrub. Very few cattle contracted the disease, the largest number on any run being estimated at four per cent. of the herd, and then so slightly that it did not reduce their condition.

The contagiousness of the malady was a matter for doubt, many of those who favoured Mr. Gordon with replies, and who had most experience of it, being of opinion that it was not transmissible.

"Hundreds of cases are cited of clean and badly-affected horses that have for years been worked in the same teams, groomed with the same brushes, fed in the same stalls, grazed in the same paddocks, and where the saddles, saddle-cloths, and harness have been used on clean and diseased horses indiscriminately, without the disease having been communicated to the clean horses.

"There is a general concensus of opinion that stabling, dry, hard food, and cleanliness is the only effectual remedy for the disease, and this appears to have been demonstrated to a certainty in the north. There are in stables, as a matter of fact, greater facilities for the disease being communicated by

means of litter and stable-fittings than in the open bush, and yet horses that are constantly stabled and properly groomed not only do not contract the disease, even when in contact with it, but there has been no difficulty in curing those that have been suffering severely from the disease on the grass, when taken up and properly fed and groomed. Cleanliness and protection from dews and the night air appear to be the sole agencies in effecting the cure in such cases.

"It has been noticed that horses suffering from the disease, on the coast, rapidly recover when sent west on to saltbush country, and it has been suggested by several northern gentlemen whether some internal treatment is not indicated by this fact. In such instances, however, the mere change of climate and quality of food would appear to have effected the cure, as we find the disease prevalent, although in a comparatively mild form, in horses constantly pastured in saltbush districts.

"As already stated, I deem the information I have received from the northern districts of special importance, and there is a remarkable unanimity in the replies of northern stockowners on the subject. Their experiences may be stated under two classifications: Those possessing only a few head of working horses, and those who own large studs of unbroken horses. Both classes report that the disease is rapidly dying out. Those whose experience of the disease has been confined to a few working horses in or near the northern port towns state emphatically that stabling, cleanliness, frequent washings with soft soap and water, and proper grooming never fail to effect a cure, without the application of any special specifics.

"In the case of large studs, it appears that on many runs, where two years ago the disease was very prevalent, it has now almost completely disappeared, and without any dressing having been applied, and it is worthy of special note that on some of such runs the disease has proved most obstinate in the case of horses that have been dressed with the usual applications; the inference would therefore appear to be that, when checked in its course, it will re-appear annually for a series of years."

Many remedies had been tried, but none were found to act as a specific. One experimenter, however, asserted that he had never failed to effectually cure it with one dressing of caustic soda dissolved in hot water and applied hot.

The disease was not fatal, and it does not appear to have interfered much with the utilisation of the affected animals, except when the skin was seriously injured by the excessive rubbing to allay constant irritation.

At the conclusion of his report, Mr. Gordon states that the affection is rapidly extending southwards along the New South Wales coast, but a doubt is expressed as to whether the conditions along the southern coast of Australia are favourable to its development.

NEW BUILDINGS AT THE ROYAL VETERINARY COLLEGE.

THE existing premises being scarcely capacious enough for the work the Royal Veterinary College now finds to do, a new range of buildings, of which the Duke of Cambridge laid the foundation stone on June 7th, will forthwith be built. The estimated cost is about £7,000, and the accommodation to be provided includes a ride wherein horses can be galloped to test their wind; and over this ride will be the theatre, capable of seating about 350 persons. Adjoining the theatre will be private rooms for the professors, the laboratory, reading rooms, and a library. The architect is Mr. A. Vernon, and the builders are Messrs. Bywater.

On the arrival of the Duke of Cambridge, he was received by the governing body of the college, and on reaching the marquee in which the proceedings were to take place, Sir Nigel Kingscote made some prefatory remarks, in which he sketched the rise and progress of the college. When the college was founded in 1791 there were but fourteen pupils, whereas there are now upwards of 300. The staff was also on a small scale; but there were fifty horses in the infirmary, and, curiously enough, the number had not materially increased since, though students have grown more and more numerous of late years, rendering the enlargement of the premises a matter of necessity. The governing body had hitherto shrunk from going to the expense of new buildings, because their lease was rapidly drawing to an end; but a fresh one for ninety-nine years had now been granted by the Ecclesiastical Commissioners. The first president of the college was the Duke of Northumberland, and its first patrons were the Prince of Wales (George IV.) and the Duke of York. The second president was the Duke of Cambridge, father of the present duke. He might mention that there was one branch of the work of the college which must have an interest for the public—the careful examination of horses and other animals, and the 910 subscribers who originally availed themselves of the privilege of thus having examinations made had now increased to 952; but he thought still more publicity was needed. On two days in the week advice was given gratis to those who could not afford to pay the ordinary fees. In conclusion, the speaker thought that the veterinary profession was much more necessary to-day than it was years ago. Veterinary science was now extended to animals other than horses, and rightly so, for cattle, sheep, and pigs now realised large prices, and their health was a matter of great importance to their owners.

Mr. Powys, the secretary, having read a list of articles deposited in the cavity,

The Duke of Cambridge formally laid the stone; after which Professor G. T. Brown, C.B., proposed a vote of thanks.

In responding, His Royal Highness expressed the pleasure he felt in attending to lay the foundation-stone of what would prove to be a valuable addition to the institution. After what had been uttered by Sir Nigel Kingscote, there was nothing more left for him to say, except that he quite agreed with him, and he was sure the governors were quite in accord with what had fallen from Sir Nigel. Veterinary science had made considerable strides in accordance with the general progress of the times, and, after all, it was only right that we should extend to dumb animals the advantage of this progress. They cannot speak for themselves, yet they have an equal right with ourselves to be considered. Among those present were the Earl of Coventry, the Earl of Portsmouth, Lord Ribblesdale, Earl Fortescue, Viscount Bridport, Viscount Hardinge, Lord Stalbridge, Gen. Sir F. Fitzwygram, Mr. Walter Gilbey, Sir Jacob Wilson, Sir Nigel Kingscote, K.C.B., Dr. Fleming, C.B., Mr. J. Arkwright, Mr. Barnard Holt, Mr. E. Marjoribanks, Mr. Howard Vincent, M.P., Mr. Albert Brassey, etc.

The ceremony of Saturday last is the most recent event in the history of an institution having a record of nearly a century. The establishment of a Veterinary College, like those which had previously existed in other countries, was advocated by Mr. St. Bel prior to the year 1791, in which year the Veterinary College was founded. Mr. St. Bel's proposals were circulated about, and the outcome was a meeting. In due course the college was established, and Mr. St. Bel became professor. In April, 1792, tenders were received from six builders, and Messrs. Howard and Co. undertook to build some stables, on a piece of ground at St. Pancras, almost before the new venture was fairly launched. Mr. St. Bel—his real name was Vial, the

name of his native village being added—died, his decease being a great blow to the newly-formed institution, and it was not without great difficulty that a new professor could be found. Mr. Moorcroft, a veterinary practitioner of high repute, was at first unwilling to undertake the office, and Mr. James Clark, of Edinburgh, was unable to give up his northern connections. In this strait the committee bethought themselves of trying to bring forward one of the medical profession, and eventually Mr. E. Coleman, then little more than an amateur in the veterinary art, offered himself, and Mr. Moorcroft consented to become joint professor to aid and assist Mr. Coleman. After a short era of this partnership Mr. Moorcroft resigned, Mr. Coleman worked with energy, and obtained a Government grant, which was continued for many years.

It may be observed that a special department of comparative pathology and research is to be established, in connection with the new buildings, under a grant of £500 per annum from the Royal Agricultural Society of England, the principal object being the investigation of epizootic diseases, which attack animals of the farm and cause extensive losses to the farmer. It is intended that the building operations shall be concluded before October 1st, on which day the next session will commence.—*The Field.*

BICHLORIDE OF MERCURY FOR SPAVIN.

In the *Zeitschrift fur Veterinärkunde*, Veterinary Surgeon Schmole recommends Bichloride of Mercury and Vaseline (1 to 6) as an application to Spavins. This ointment, when rubbed into the skin over the tumour, operates in a very active manner, but it does not cause removal of the hair.

A NEW DOG-MUZZLE.

Mr. Woodroffe Hill, F.R.C.V.S., of Hastings, has successfully endeavoured to minimise the discomfort of muzzling by producing a muzzle constructed out of a solid piece of leather, thus avoiding the friction and irritation so often resulting in wounds occasioned by the rivets and unions which exist in the ordinary muzzle.

Its claim to be the most humane muzzle yet produced is fully justified, whilst its simplicity, lightness, and efficiency should recommend it to every member of the dog-loving public in those districts where muzzling is enforced.

THE REGISTRATION OF HORSE-SHOERS.

On May 2nd an influential and successful meeting was held at the Mansion House, London, under the auspices of the Worshipful Company of Farriers, for the purpose of promoting the scheme for the registration of horse-shoers. The Lord Mayor was in the chair, and explained the object of the meeting and the benefits likely to be derived from its achievement. After statements by Mr. Wynne Baxter, the Secretary of the Company, and Mr. Smith, its Acting Master, Lord Moreton, President of the Royal Agricultural Society, moved the following resolution: "That in the opinion of this meeting it is highly desirable that arrangements should be made to promote the technical instruction and systematic registration of farriers or shoeing-smiths throughout the country." Mr. Burdett-Coutts, M.P., Mr. J. Colam, Secretary of the R.S.P.C.A.,

and Colonel Grattan seconded and supported the resolution, which was carried.

Sir John Thorold, Bart., moved: "That this meeting generally approves of the scheme, prepared by the Worshipful Company of Farriers, and amended in conference by the Worshipful Company, the Royal Agricultural Society, and the Royal College of Veterinary Surgeons." Mr. Cohen seconded the resolution, which was supported by Mr. Clay and Sir Henry Simpson, and unanimously carried.

Professor Axe moved: "That this meeting recommends that the Worshipful Company of Farriers proceed at once to organise the Registration Committee, and take all other necessary steps to carry out the scheme, and that subscriptions be invited from the public towards the expenses of carrying out the scheme." Mr. Alderman and Sheriff Knill seconded, and Dr. Fleming, C.B., supported the resolution, which was also carried unanimously.

A vote of thanks to the Lord Mayor closed the proceedings.

NEW FELLOWS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

An examination for the Fellowship of the Royal College was held in Glasgow on May 26th, when the following gentlemen passed:—C. Phillips, Esq., A.V.D., Piershill; J. A. Dewar, Esq., Aberdeen; A. J. Haslam, Esq., A.V.D., Athlone; A. W. Mason, Esq., Leeds.

EXAMINATIONS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

At meetings of the Court of Examiners, held in London on and between May 13th to 16th, the following students from the Royal Veterinary College passed their Examinations, and were admitted members of the profession:—

Mr.	L. F. L. Savournin	Buckingham Palace Rd., W.
„	J. H. Hind	Melton Mowbray.
„	A. D. Lalor	Hampstead, N.W.
„	J. A. Leggett	Regent's Park Road, N.W.
„	G. B. Wills	Stroud Green, N.
„	J. H. Booth	Oran, Catterick, Yorks.
„	G. H. Bishop	Bedminster, Bristol.
„	B. P. Boyle	Towcester.
„	A. E. Roberts	Tintern, Chepstow.
„	H. J. Farnham	Bridport, Dorset.
„	F. W. Greenlaw	Mannamead, Plymouth.
„	E. J. Fowler	West Green.
„	H. S. Smith	Usk, Monmouthshire.
Capt.	G. H. Farrell	Hyderabad, India.
Mr.	J. B. Tutt	Wishford, Salisbury.
„	F. L. Somerset	Doncaster.
* „	M. A. Hutchence	Penshurst, Kent.
* „	J. E. Row	Paignton, S. Devon.
„	F. M. Hill	Hellingley.
„	T. C. Garry	Clapham, S.W.
„	F. H. R. Bunbury	Paddington.

Mr.	F. E. Place	Southwell, Notts.
„	E. Morgan	Machynlleth.
„	D. Pugh	Penclavidd.
„	J. McT. McCall	Glasgow.
„	W. Skaife	Montreal, Canada.
„	E. Porter-Smith	Clapham, S.W.
„	J. Gosling } These have not yet complied with the rules of the	
„	H. T. Armstrong } College.	
„	W. K. Stuart	Brighton.
„	C. B. Harris	London.
„	F. J. Carless	Stafford.
„	F. Gregory	London.

The following students passed their Second Examination :—

Mr.	A. S. Westworth.	Mr.	A. Brown.
* „	J. E. Shacklock.	„	C. W. Howard.
„	J. Limbrick.	„	W. A. Stanway.
✪ „	A. Hawes.	„	J. F. Kemp.
„	C. W. Brown.	„	G. C. Lowe.
„	A. G. Hillier.	„	P. J. Welsh.
„	W. Collinson.	„	H. A. Sullivan.
„	A. H. Lane.	„	N. P. Horsley.
„	W. H. James.	• „	W. M. Dobbings.
„	A. P. Case.	„	I. Maguire.
„	S. H. Thorn.	„	T. J. Arman.
* „	F. G. Sikes.	* „	W. Wadsworth.
„	W. B. Edwards.	* „	T. A. Ford.
„	J. H. Lockwood.	„	D. P. Davies.
* „	W. W. Grasby.	* „	G. H. Williams.
† „	J. W. Reynolds.	• „	C. Edmonds.
„	A. M. Ward.	„	J. Shepherd.
„	J. Toms.	* „	J. H. Manton.
„	H. T. Sawyer.	* „	G. J. Harvey.
* „	J. H. Taylor.	„	G. D. Norman.
„	G. H. Martin.	* „	W. R. Mills.
* „	M. T. Sadler.	• „	A. England.
„	A. E. Clarke.	„	W. T. Cade.
„	F. W. Wilson.	„	F. Hobday.
„	A. E. Bayley.	„	H. Sessions.
„	A. J. Catteli.	„	F. B. Eve.
* „	A. Crafts.	„	E. R. James.
„	C. C. Abram.	„	J. E. Wallis.

The following students passed their First Examination :—

†Mr.	A. G. Grist.	Mr.	H. J. Collins.
„	W. D. Wallis.	„	H. E. Passmore.
„	W. H. Hunting.	„	A. L. Wilson.
„	R. Youngs.	„	G. A. Hewitt.
„	T. W. Lloyd.	„	W. James.
„	J. Hawkesworth.	„	W. H. Herford.
„	H. G. Westgate.	„	J. H. Ward.
† „	W. T. Broad.	„	F. W. Thompson.
• „	J. B. Young.	• „	G. H. Lamb.
„	A. Blake.	„	W. F. Widden.
„	J. Parkinson.	„	F. F. Hornby.

	Mr. F. Scott.		Mr. E. T. Pearce.
	„ E. G. Robertson.		„ J. W. Pritchard.
	„ F. W. Hunt.		„ C. J. Reakes.
	„ R. J. Ring.	†	„ W. Stapley.
	„ H. L. Tidey.		„ W. C. Watts.
†	„ W. S. Maynard.		„ F. G. Relf.
†	„ S. E. Broad.		„ H. F. Downe.
*	„ F. L. Clunes.		„ E. M. Dixon.
	„ P. S. Falshaw.	*	„ G. E. Bath.
*	„ H. W. P. Dollar.		„ H. S. Leonard.

Marked thus * passed with great credit.
„ „ † „ „ very great credit.

ARTHUR W. HILL, *Sec.*

At meetings of the Board of Examiners held in Edinburgh and Glasgow, on and between May 21st and 29th, the following gentlemen passed their final examination and were admitted Members of the Royal College of Veterinary Surgeons:—

Glasgow Veterinary College.

Mr. P. J. Austin		Glasgow.
„ J. Barrowman		Glasgow.
„ A. Campbell		Newtonards, Co. Down.
„ W. H. Davidson		Ibrox, Lanarkshire.
„ P. Gillespie		Strathbungo, Lanarkshire.
„ W. M. Hutchinson		Markethill, Armagh.
„ T. Jarvie		Wishaw.
„ J. Kirk		Dumfries.
„ A. Renfrew		Hurlet, Renfrew.
„ J. Thompson		Ballnahinch, Co. Down.
„ J. K. Thompson		Londonderry.
„ S. R. Thompson		Dundrod, Antrim.
„ A. Veitch		Prestwick, Ayr.
„ G. Waddell		Glasgow.

Dick College.

Mr. J. Aikin		Newcastle.
„ W. Ackroyd		Halifax.
* „ A. Breakell		Garstang, Lancashire.
„ C. Byner		Staplecross, Sussex.
„ E. Bowman		Edinburgh.
„ L. H. Fairer		Kirby Stephen.
„ C. E. Gray		Portobello.
„ J. Higginson		Shrewsbury.
„ R. Milne		Cupar, Fife.
„ A. Paterson		Ballater, Aberdeenshire.
„ R. G. Robertson		Dunfermline.
„ D. Stranaghan		Belfast.
„ W. Sherriff		Hawick.
„ G. Sinclair		Bathgate.
„ W. Weston		Grantham.

New College.

Mr. J. W. Bate		Sutton, Cheshire.
„ F. Cosgrove		Chester.
„ W. Kendall		Barrow-in-Furness.

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Mr.	J. Lindsay	Kelso.
„	A. McGregor	Crieff.
„	E. Murray	Driffield, Yorkshire.
„	J. H. Parker	Leadgate, Durham.
„	C. Ward	Penrith.

The following gentlemen passed their Second Examination:—

Dick College.

Mr. V. Banks
„ J. Brown
† „ A. Burnfield
„ C. Baxter
„ J. N. Carmichael
• „ J. Davidson
„ D. S. Davidson
„ H. Eve
„ J. Griffith
„ J. Garvic
„ J. Henderson
* „ T. Hoggan
„ W. Hamilton
„ J. W. Hudson
„ R. Holmes

Mr. G. Jarrett.
„ J. Ker.
„ P. Mullane.
• „ J. Pringle.
„ A. Pottie.
„ M. Pottie.
• „ J. Paton.
• „ W. Pye.
† „ J. Park.
„ W. J. Richardson.
„ D. Ritchie.
• „ W. Sturdy.
„ W. Stewart.
„ E. Thurburn.
„ G. A. Thomson.

New College.

Mr. G. W. Balfour
• „ J. Carpenter
• „ J. Connochie
„ R. Eagleshaw
• „ M. Fitzgibbon
• „ C. Haywood

• Mr. R. E. Johnstone.
„ J. A. Lyons.
„ J. H. Siddle.
„ W. Sime.
„ A. A. Todd.
„ J. M. Young.

Glasgow College.

Mr. A. Campbell
„ R. Campbell
„ J. Douglas
„ S. E. Dunn
„ J. Forrest
† „ J. A. Gilruth
„ A. Greenhill
• „ A. Hamilton
„ C. T. Holmes
„ J. E. Johnstone

Mr. J. A. Jordan.
„ F. J. Lennox.
• „ T. F. McDonald.
„ W. Marshall.
„ S. Martin.
„ J. W. Neill.
„ W. Packmann.
„ S. C. Pottie.
• „ J. D. Walker.

The following gentlemen passed their First Examination:—

Dick College.

Mr. G. Ashe
„ W. Blanchard
„ R. Beilby
• „ P. Dardis
„ W. Doyle
• „ R. N. Flannery
„ J. A. Hepburn

† Mr. C. R. Neale.
„ A. P. Ord.
† „ W. Robertson (Edin.)
• „ G. W. Sturgess.
„ J. W. Senior.
† „ P. L. Smyth.
„ R. Stordy.

Mr. C. Hay
† „ T. Healy
„ P. Kearney
„ J. Little
† „ F. McRoberts
* „ J. McIntosh
* „ A. McFarlane

Mr. W. Scott.
* „ S. R. Tufts.
„ F. W. Taylor.
„ T. Threekeld.
„ A. F. Walshe.
„ W. Walker.

New College.

Mr. J. M. Arthur
„ E. W. Anderton
† „ O. C. Bradley
„ G. Ellis
„ J. Evans
„ A. P. Gribben
„ G. W. Hewetson
„ G. B. Holden

Mr. R. T. Hutchinson.
* „ F. B. Pearson.
„ H. Percival.
* „ E. Plant.
„ C. S. Smith.
„ E. H. Stent.
„ G. M. Williams.
„ E. E. Wood.

Glasgow College.

Mr. R. Aitkenhead
* „ A. Crabb
* „ W. Dawson
* „ J. Furniss
„ J. Gillies
„ D. Hamilton
„ G. Irvine
„ A. Jackson
„ D. Lochead
„ J. M. Mark

Mr. J. McDougall
* „ J. McKie.
* „ W. McMurray.
† „ A. McNairn.
„ J. E. Pottie.
„ W. O. Robertson.
„ D. Stewart.
„ G. Steuart.
„ F. Waddington.

R. RUTHERFORD, F.R.C.V.S.,
Secretary to Board of Examiners in Scotland.

Marked thus * passed with great credit.
„ „ † „ „ very great credit.

THE ANNUAL DINNER OF THE ARMY VETERINARY DEPARTMENT.

THE annual dinner of the Officers of the Army Veterinary Department was held at the Metropole Hotel, on June 20th, under the presidency of the Principal Veterinary Surgeon. It was a most agreeable meeting, and the number of officers present was unprecedently large, owing to this being the last occasion on which Dr. Fleming would preside, his retirement from the Army taking place on the 28th of that month.

There were present: Principal Veterinary Surgeon Fleming, C.B.; Inspecting Veterinary Surgeons Lambert, Oliphant, and Walters; Veterinary Surgeons, first-class, Thomson, Queripel, Oliver, Kettle, Reilly, Hammond, Glover, Woods, Wilson, Evans (J. W.), Jones, Whitfield, Burton, Longhurst, Spooner, Anderson, Mills, Edwards, Pallin (D. C.), Morgan, Ringe, Killick, Moore, Raymond, Day, Lees, Short, Mann; and Veterinary Surgeons Kelly, Appleton, Braddell, Drage, Moore, and Stratton. The following retired officers also appeared on the occasion: Inspecting Veterinary Surgeon C. Steel, and Veterinary Surgeons Gibbs and Pallin. Captain Beech, C.M.G., 20th Hussars, commanding the Egyptian Cavalry, and late of the Department, joined the company, and was warmly welcomed by his former colleagues.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

PROFESSOR J. WORTLEY AXE, President, in the chair.

A SPECIAL Meeting of the Council was held at 10, Red Lion Square, Bloomsbury, W.C., on 3rd June, 1890. Members present: Professors W. Duguid, J. McCall, J. Penberthy, Thos. Walley, W. Williams, Gen. Sir Frederick Fitzwygram, Bt., Sir Henry Simpson, Dr. Geo. Fleming, C.B., and Messrs. J. D. Barford, Thos. Briggs, B. Cartledge, J. Roalfe Cox, Thos. Greaves, W. Hunting, H. Kidd, J. D. Lambert, W. J. Mulvey, Thos. H. Simcocks, Jas. F. Simpson, Peter Taylor, R. C. Trigger, W. Whittle, W. Wilson, F. W. Wragg, Geo. Thatcher (solicitor), and A. W. Hill (secretary).

The SECRETARY stated that he had received a letter from Mr. Woods regretting his inability to attend the meeting. He also read some correspondence from the Principals of the Schools, with regard to the alterations in the proposed Revised Regulations.

The PRESIDENT informed the Council that the meeting had been convened for the purpose of considering, and, if deemed advisable, of passing the proposed Revised Regulations for the Examination of Veterinary Students in General Education, as follows;

1. Students who enter the Veterinary Schools shall, prior to their first professional examination by the Royal College of Veterinary Surgeons, undergo an examination in the undermentioned subjects, or produce a certificate of having passed one of the following examinations:—

(1) For matriculation, or any higher examination for degrees, or one of the "local examinations" held by a University in the United Kingdom, or by a Colonial or Foreign University recognised by the Council of this College.

(2) For the certificates of the first or second class granted by the College of Preceptors.

(3) An examination recognised by the General Medical Council as exempting candidates from the preliminary literary examinations of the various medical corporations; or a certificate of examination by the Incorporated Law Society; or the preliminary examination of the Pharmaceutical Society.

(4) 1. Intermediate Education Board of Ireland. 2. Apothecaries' Hall, Ireland. 3. Military, Naval, Civil Service, Marine, and Divinity—any part of the United Kingdom.

Provided the subjects mentioned in the certificates are those laid down by the Royal College of Veterinary Surgeons.

2. Students who do not produce one or other of the certificates referred to shall be examined by a Board of Examiners appointed by and under the direction and supervision of this College, to whom they shall report the result of the examination, which shall be uniform and applicable to the whole of the United Kingdom. The nature and extent of this examination shall be fixed by the Council from time to time. It will be of two classes of subjects—one *obligatory*, and the other *optional*.

The following are the subjects of examination:—

PART I.—*Obligatory Subjects.*

1. Reading aloud.
2. Writing from dictation.
3. English grammar, with parsing and composition.
4. Arithmetic—the simple and compound rules, with vulgar and decimal fractions.
5. Either outlines of English history, *or* geography of Europe and the British Isles.

6. One of the following foreign languages :—
(*a*) Latin : First Book of Cæsar's Commentaries, *or* an alternative "unseen" paper.
(*b*) French (no set book).
(*c*) German ditto.

PART II.—*Optional Subjects.*

1. Euclid, Book I., or the subjects treated therein.
2. Algebra to quadratic equations.
3. Natural history : zoology, botany, physiology (one branch only).
4. Inorganic chemistry.
5. Mechanics.
6. Any of the specified foreign languages not taken as obligatory.

He formally moved the acceptance of the foregoing regulations.

Mr. J. ROALFE COX suggested that sub-section 2 of section IV. be altered as follows :—"Provided the subjects mentioned in the certificate embrace those laid down by the College."

Professor WILLIAMS thought it would be advisable to omit the paragraph altogether.

On the motion of Mr. BRIGGS, seconded by Mr. SIMCOCKS, it was resolved that the paragraph should be expunged.

On the suggestion of Professor WALLEY, it was agreed that the paragraphs should be taken *seriatim* and discussed.

On the motion of Mr. BARFORD, seconded by Mr. J. F. SIMPSON, paragraph I. was adopted.

Mr. KIDD said there was a slight ambiguity with regard to paragraph II., and he suggested that any division of the first class of the College of Preceptors examination should be taken, and also the first division of the second class. Professor PENBERTHY seconded the proposal.

Dr. FLEMING, in supporting the proposal, said that in these days of cheap education it was imperative that young men coming up for diplomas should be properly educated.

Professor WALLEY said he thought 50 per cent. of marks should be taken instead of 30. The higher they went the better, so long as the students had time.

It was resolved that paragraph II. should read thus :—"For the Certificates of the First-Class, or the First Division of the Second-Class granted by the College of Preceptors."

Professor WALLEY moved that paragraph III. remain unaltered. Mr. BARFORD seconded the motion.

Mr. BRIGGS moved as an amendment that the words "Preliminary Examination of the Pharmaceutical Society" be struck out.

Mr. J. F. SIMPSON said that if Mr. Briggs could assure him that the Preliminary Examination of the Pharmaceutical Society was really a low examination, he should be prepared to second the amendment.

Professor PENBERTHY said that the examination was inferior to their own first-class certificate of the second division ; the only thing to be said in its favour being that it gave 40 per cent. of marks for passing instead of 33. It would increase the number of students coming into the profession through that lower and more simple examination, and the College would be losing a great deal by not getting the fees for the Matriculation Examination, for it would have to pay the College of Preceptors considerable sums for carrying on those examinations.

The amendment having been put to the meeting and lost, the original motion—that the paragraph remain unaltered—was then put and agreed to.

Professor WALLEY moved the acceptance of paragraph IV. Professor DUGUID seconded the motion.

Mr. SIMCOCKS moved as an amendment that after the words—"Intermediate Education Board of Ireland," the words "senior or middle grades" be added; and that the certificate of the Pharmaceutical Society of Ireland, and of the Incorporated Law Society of Ireland be also accepted. Mr. LAMBERT seconded the amendment.

Mr. MULVEY reminded the Council that when the Committee appointed by the Council to consider the matter met, they had with them the representatives of the College of Preceptors, and that the explanations given by those gentlemen with regard to the various certificates had satisfied the Committee, in fact they had accepted the statement of experts.

Gen. Sir FREDK. FITZWYGRAM said that the Committee which had been appointed had no doubt thoroughly investigated the matter, and he conceived it to be the business of the Council, when it received the report from the Committee, either to accept or refuse the broad grounds upon which the Committee had done their work. He did not think it advisable to discuss the details of the results at which the Committee, after full consideration, had arrived.

Mr. J. F. SIMPSON said he agreed to a great extent with Gen. Sir Fredk. Fitzwygram, but when he saw the College of Preceptors recommending them to accept the preliminary examination of the Pharmaceutical Society, which undoubtedly was far inferior to the examination that the Royal College demanded to be passed by an intending student, he thought it was the duty of the Council to criticise the suggestions made by the College of Preceptors.

It was resolved that paragraph IV. should read as follows:—"(1) Intermediate Education Board of Ireland; senior or middle grades. (2) Apothecaries' Hall, Ireland. (3) Military, Naval, Civil Service, Marine, and Divinity —any part of the United Kingdom."

On the motion of Mr. LAMBERT, seconded by Mr. PETER TAYLOR, it was resolved that the first part of the next paragraph should read as follows:—"Students who do not produce one or other of the Certificates referred to, shall be examined by a Board of Examiners appointed by and under the direction and supervision of this College. The examination shall be uniformly applicable to the whole of the United Kingdom, and the result of the same shall be reported to the Council.

Professor WALLEY moved the acceptance of the next portion of the paragraph:—"The nature and extent of this examination shall be fixed by the Council from time to time." He further proposed that what followed should be struck out, so as to do away with the optional subjects which were utterly useless, and were not required for any practical purpose. Mr. WHITTLE seconded the proposition.

Mr. HUNTING said he was greatly surprised to hear it announced that the optional subjects which had been on the list for some years, were useless. If they were not of use, instead of knocking them out let the Council make them of use. Only the other day the General Medical Council had discussed the same subject, and the President had drawn attention to the fact that notions of education were altering, and he pointed out that if there were obligatory subjects and optional subjects, the obligatory subjects should be small in number, but that thoroughness should be insisted upon; and, at the same time, that there should be optional subjects, so as to allow men who had many good points in some of the optional subjects, although they might be deficient in some of the obligatory ones, to have a fair chance of entering the profession. If Latin, for instance, were insisted upon, a good scholar in French or German might be rejected, whereas he might be worth double of what a student was worth who had passed in Latin. He would suggest, instead of the op-

tional subjects being expunged, that marks should be allowed to students for those various subjects.

Professor WALLEY said that when the optional subjects were placed in the regulations, it was intended that they should be accepted in lieu of the educational examinations for the Fellowship degree, and they had never been removed since that examination was altered. They had, however, as far as he knew, never been made the slightest use of; if they were made use of he would go heart and hand in retaining them in the list.

Professor WILLIAMS suggested that the obligatory subjects should be added, and to give the student a choice of ten, making five or six obligatory.

Professor MCCALL suggested that two certificates should be granted, namely, a certificate for obligatory subjects, and a higher class certificate for the optional subjects.

Professor WALLEY said that as a matter of fact, although the Educational Institute, not only in Glasgow but in Edinburgh, granted first, second, and third class certificates, it did not alter the fact that the third class certificate admitted a man, and the optional subjects did not help him in the least. The student had to pass 30 per cent. only in the obligatory subjects.

Mr. TRIGGER agreed with Mr. Hunting that optional subjects should be counted to the credit of the students, and that the examiners should award marks for them.

The PRESIDENT concurred in the idea that students should be encouraged to go in for the optional subjects.

Mr. HUNTING proposed that line 2 of optional subjects be deleted, and that a sentence be added to the effect that students should pass in any six subjects.

Professor WILLIAMS suggested that candidates should pass in six subjects, four of which should be obligatory.

Sir HENRY SIMPSON said that as a member of the committee who attended the conference held with the Dean of the College of Preceptors, he should like to point out that the committee felt that they were unable properly to lay down a curriculum without professional advice, and that professional advice having been obtained, he hoped the Council would not depart from what had been agreed upon by the committee after very careful consideration and discussion. A man might choose to go in for the obligatory subjects, and if he choose to go in for both the obligatory and optional, of course he received marks for both.

Professor WALLEY said that that course had hitherto never been acted upon.

Mr. MULVEY said that as there had been so many alte ations he would move as an amendment that the whole matter be referred back to the Committee for re-consideration.

Mr. HUNTING seconded the proposal.

Professor WALLEY thought that Professor Williams' suggestion would meet the difficulty, namely—that the candidates should pass in six subjects, four of which should be obligatory, and two optional.

The amendment was put to the meeting and lost.

Mr. WILSON said that a resolution had been carried by a large majority at the annual meeting, requesting that Latin should be made an obligatory subject in the examinations. He thought it would be advisable for the Council now to embody that subject. It would not come into operation before 1891, and therefore plenty of notice would be given.

Mr. LAMBERT moved that Latin be made an obligatory subject.

Mr. PENBERTHY seconded the motion.

Mr. HUNTING said that the old idea that Latin as a classical language was necessary for an educated man had been played out for more than thirty

years. A knowledge of French and German was of far more importance, for it would enable a student to read anatomy and physiology in those languages. On that ground he should most decidedly vote against Latin being made a compulsory subject.

Sir HENRY SIMPSON moved that the subjects should stand as they were with the alteration that in the obligatory subjects No. 6 should stop at sub-section A, and that French and German should be added to the optional subjects.

Professor WALLEY seconded the proposal.

Professor WILLIAMS reminded the Council that Latin was a dead language, whereas the best books on veterinary subjects were written in French and German. A student who had a knowledge of French or German was in the position of making himself a much better man than the best Latin scholar that ever lived.

Dr. FLEMING said he did not exactly know what the French schools required, but the German schools demanded a knowledge of Latin, and he also knew that the German professional works contained an abundance of Latin, nearly all the scientific terms being in that language. He looked upon a knowledge of Latin as of great value, but he did not the less say that a knowledge of French or German was also valuable. Personally, he would prefer to make Latin altogether compulsory, and then bring in French and German.

The motion that Latin should be made an obligatory subject was then put to the meeting and carried, 13 voting for and 9 against.

Mr. SIMCOCKS moved that either French or German be made an obligatory subject.

Dr. FLEMING seconded the motion, which was agreed to.

Dr. FLEMING moved the adoption of Part II.—Optional subjects.

Mr. PETER TAYLOR seconded the motion, which was agreed to.

On the motion of Professor WILLIAMS, seconded by Professor MCCALL, it was resolved that the Revised Regulations for the examination of veterinary students in general education should not come into operation until September, 1891.

Professor WALLEY said that at the last meeting and since, the standard of 50 per cent. of marks had been objected to as too high. He had been in consultation with Mr. McKay of the Educational Institute, and they were both willing to reduce the standard to 30 per cent. provided 50 per cent. was still retained for the English part of the obligatory subjects. There should not be less than 50 per cent. in "writing from dictation."

Dr. FLEMING observed that when the Committee met, the Dean of the College of Preceptors thought 50 per cent. too high, and suggested that it should be 45 per cent.

Mr. GREAVES suggested that it be left to the Examining Bodies to use their own discretion in the matter.

Professor WALLEY gave notice of motion that at the next meeting he would move that the regulation with regard to the standard of 50 per cent. of marks be rescinded.

The PRESIDENT said he thought it would be desirable to have the report of the Committee appointed to inquire into the subject read.

The SECRETARY read the minutes of the meeting of the Matriculation Examination Committee.

Sir HENRY SIMPSON said that the College was responsible for the examination papers which were set. It had occurred to him whether the College of Preceptors could not prepare a paper and then send it on to the Educational Committee, which should be a very representative one, containing all the Principals of the schools in Scotland if they happened

to be members of Council. The Royal College might ask the College of Preceptors to undertake the examination in England, and the Educational Institute might be asked to undertake the examination in Scotland. The papers would be identical. That, he thought, would be a practical way of getting out of the difficulty.

Professor WALLEY said that Sir Henry Simpson's proposal was identical with the suggestion he had only the previous day thrown out to Mr. McKay of the Educational Institute, who entirely concurred with the idea. He (Professor Walley) thought it was originally understood that it was to be a conjoint board.

Professor WILLIAMS thought the case would be met by the addition at the end of Part II. of the words: "Such examination to be conducted by the Royal College of Preceptors or the Educational Institute of Scotland."

Mr. WILSON said that the gentlemen who had attended at the committee said it was undesirable to have two examining bodies, for when one body was examining a great number of students might present themselves, whereas when another body was examining only a very few students might come up for examination.

The PRESIDENT said he could see no objection to the examination being conducted one year by the Educational Institution, and another year by the College of Preceptors.

Professor MCCALL said he thought the two bodies should be asked if they would conjointly conduct the examination, but if one institution declined to act with the other, he was of opinion that the Council ought to select the Educational Institute of Scotland. It would be a good plan for the College of Preceptors to set the papers one year and the Educational Institute the next, the papers to be uniform throughout England and Scotland.

Professor DUGUID asked who was to make the awards.

Professor WILLIAMS said that the details could be determined upon by the two Institutions.

Dr. FLEMING suggested that the secretary be requested to write to both of the bodies, asking them if they would kindly arrange to carry out the examinations.

This was agreed to.

Professor WILLIAMS called the attention of the Council to certain discrepancies in Bye Laws 7 and 17.

ELECTION OF PRESIDENT.

Mr. W. HUNTING said he had great pleasure in proposing Professor McCall as President of the College for the ensuing year. Circumstances had prevented that gentleman from taking the chair for two or three years, but now that he was able to do so he felt sure the Council would unanimously elect him. As far as seniority went he had no competitor, and he had certainly no competitor as far as position in the profession was concerned.

Mr. CARTLEDGE seconded the nomination, which was unanimously accepted. Professor McCall then took the presidential chair.

The PRESIDENT said he thanked the Council most sincerely for the honour they had conferred upon him in electing him President of the College. He always valued the position, and, had it been in his power to have accepted the position before, it would have given him great pleasure to do so; but he found that he could not discharge his many duties in Glasgow, and at the same time do what he thought was necessary as representing the College He was not only aware of the honour conferred upon him, but was fully alive to the responsibilities now devolved upon him. He was also alive to the lustre which had been shed upon the office by his predecessor, and he trusted that when the time came round for him to vacate the presidential chair that

We may summarise our reasons for considering this disease to be pernicious anæmia, thus:

Temperature.—A point of interest we have noted in the case of Surra in India, and other veterinary surgeons had done in that of pernicious anæmia seen in Europe, is the well-worn, but mysterious subject, the paroxysms of increase of temperature, the so-called "anæmic fever" of writers on pernicious anæmia in the human subject. Zschokke* also, it is well known, has assigned a prominent place to this fever in the horse, which he found to be of an intermittent type; and Fröhner† has likewise noted a marked rise in temperature on the fourth day, which, with slight remissions, remained high till death.

There was a time when the statement that a fever showed relapses was held to be a sufficient explanation of its nature. It is not so now, but the word still conceals a considerable amount of ignorance, or at least an imperfection in our knowledge of the diseases that are included under it. We must not restrict the term, in practice, to relapsing or famine fever, for the etymology of the word indicates such maladies as are characterised by relapses, and is often applied to all affections in which relapses in the fever are present. Thus, we have two classes of disease commonly called relapsing—a definite disease which has been described by Dr. Carter, and is known as relapsing fever; and diseases in which relapses commonly characterise the fever, as in some forms of acute rheumatism, in "Weil's disease," in essential anæmia, etc. I have, moreover, seen a few instances in which relapse was noted during the course of Anthrax Fever in horses, the term not being made use of unless there had been decided return of the symptoms of Anthrax and of bacilli in the blood, accompanied by a temperature several degrees above the normal. Veterinary Surgeon Hazelton, A.V.D., who lately investigated an outbreak of Anthrax at St. Thomas' Mount in Madras, practically confirms my observations relative to the temperature variations peculiar to Anthrax, and which I noted some years ago.

Duration and Course.—There are usually an unlimited number of relapses, the average duration of the disease being probably not less than two months; the average duration of the human disease (pernicious anæmia) being also estimated at two months. The average of twelve cases of Surra noted by Mr. Steel was over sixty-six days; that of several cases observed by Dr. Evans (Report on Surra Disease, 1880) was two months. It is seen that weak animals succumb sooner, and in some outbreaks the ordinary duration of the disease does not exceed from one week to a fort-

* Schweizer-Archiv fur Thierheilkunde, Bd. xxv., 1883.

† Archiv für Wissens. u. Prakt. Thierheilk., Bd. xii., 5 u. 6 Heft, 1886.

night, and frequently may be less in outbreaks in which reckoning was made *after* the date of admission on the sick report. A few cases have been seen to make slow progress in the disease for over a year. The most important feature of the disease is that there is no history of a definite onset, and that the condition is progressive.

Fatality.—This disease in the horse has been characterised as "invariably fatal" by more than one writer. There is probably no disease in which the fatality is so high as in pernicious anæmia.

Necropsy.—Inspecting Veterinary Surgeon G. Oliphant writes: "In one outbreak of Surra in the 18th Bengal Cavalry, in which 180 horses died, I made dozens of *post-mortem* examinations, and the appearances in all were identical—extreme pallidity of the tissues, with perhaps a trifling serous effusion into the abdomen, etc. In fact, the animals looked as if they had been starved to death." Dr. Evans, A.V.D., says: "I am prepared to state positively that this disease is not characterised by any structural organic change; it is purely a disease of the blood." Zschokke also states that "none of the principal organs show any marked structural change in pernicious anæmia in the horse." Mr. Steel lays stress on the presence of gastric ulcers as characteristic of Surra; and the relation of gastric ulceration to pernicious anæmia formed the subject of discussion lately at the Royal Academy of Medicine of Ireland. (*Lancet*, March 10th, 1888, p. 474.)

Appetite.—In spite of a greedy appetite, debility appears progressive in character. It is scarcely necessary to remark on the importance of this symptom in diagnosis, as all who have written on the disease lay special stress on it. Professor Fröhner has noticed it in the German type of equine pernicious anæmia; and Veterinary Surgeon John Cooper, A.V.D., who has only lately reported an outbreak of Surra among ponies in Berars, says that "the appetite is seldom quite lost, and sometimes an animal continues to feed up to the very last."

Influence of Season.—It has been seen that Surra occurs most commonly after the rainy season in India. There may be many local conditions—susceptibility of sex to climate, season, etc.—that may affect the greater prevalence of disease in males or in females, in different outbreaks. Dr. Moore, at a recent meeting of the Royal Academy of Medicine of Ireland, pointed out that season exercised a great influence on the occurrence of anæmia in the human subject.

Treatment.—I attached considerable importance to arsenic in the treatment of cases of this disease, with the view of comparing or contrasting the results with those obtained through the use of this

agent in pernicious anæmia, and in a back number of the *Quarterly Journal*, Mr. Butler, A.V.D., has reported most interesting results from treatment of cases of Surra "with arsenic pushed as far as possible." The cases were "doing well, not losing condition, and the temperature keeping down." This observation is worth noting, when we remember that arsenic is the only remedy of any value in cases of pernicious anæmia in the human subject.

Clinical History.—The clinical history of Surra in general is that of pernicious anæmia. The marked anæmic conditions, observed both *ante* and *post mortem*, the leucocytosis, the fatty degeneration of the muscles, liver, heart, spleen, and other organs, the general hæmorrhages, and the chronic state of fever, which end in death in so many cases, leave no doubt as to the nature of the disease.

From a comparative point of view, it is interesting to observe how the above manifestations of pernicious anæmia correspond with those shown in man, in whom the fatality, duration, and course, and other features peculiar to this disease in animals, are represented by so closely allied characters. The marked anæmia noted in Surra, the paroxysms of increase of temperature, the duration and course, and the extreme fatality, together with the history of the parasites seen in the blood, form a group of conditions sufficiently diagnostic of pernicious anæmia.

Editorial.

VETERINARY EVIDENCE IN COURTS OF LAW.

THE value of expert evidence is in direct relation to its trustworthiness, and this should depend upon the scientific knowledge, experience, and rectitude of the expert. Such evidence is usually sought in cases in which ordinary knowledge is not sufficient to afford all the information necessary to arrive at a definite and just conclusion, in a subject under investigation. Investigations of this kind may take place anywhere, but perhaps they are most frequently conducted in courts of law, where the expert is compelled to give his testimony on oath, and is therefore solemnly pledged to state what is really his belief, as a specialist, with regard to the matter upon which his assistance has been sought. The matter may be most complicated and difficult of solution, or it may be so simple that the views of the expert are scarcely needed except to make assurance doubly sure. In any case, he is called to assist in promoting justice, and his aid should be given conscientiously and truly, impartially, and to the best of his ability. But it must be confessed that only too frequently experts cut a remarkably bad figure in the witness-box, from the very contradictory evidence they give, and one is often led to conclude either that the branch of science they represent is in a most backward condition, or that some of the witnesses are very stupid or utterly unscrupulous as to the kind of opinion they give.

Veterinary evidence, if recent law trials are to be adduced as proof, is rapidly coming to be regarded as of little or no value, and in this way has already become a standing menace to the reputation of our profession; inasmuch as judges are not only disposed to ignore it altogether, but to make severe comments on the witnesses and the unreliability of their technical knowledge, at the same time deciding the cases before them on the testimony of laymen whom we should consider very unreliable persons indeed. It would seem impossible for veterinary surgeons to agree upon the most simple case which can be brought into a law court; for if half-a-dozen can be engaged for the prosecution, as many can be found for the defence. On points which one would think there could be no dispute about, we find the most contradictory opinions emitted and strenuously adhered to; whether a horse has or has not a splint, a spavin, a ringbone or any other defect visible and accessible to the touch, may any day be the cause of conflicting statement by experts, and a source of annoyance and bewilderment to the judge who listens to them. Things which should admit of no dispute whatever are a perfect bone of contention in the witness-box, and the result is damaging to the good name of our calling and can only be productive of harm.

Take the trials which occur so frequently with regard to soundness

in horses, for instance, or those which have reference to cruelty to animals, and we have at once examples of the length to which divergence of opinion can go. One example is given in the present issue of the Journal, and the remarks and action of the judge are only a repetition of those with which we have become so painfully familiar in similar cases. Not long since a knacker was convicted in London for gross cruelty to a horse and sentenced to a term of imprisonment. The animal had been sold to him by a cab-owner, because it was very *lame* from abscess or fistula in a *fore foot*. Instead of killing the poor brute on the premises and carting away the carcase, the knacker travelled it on a dark night to his establishment, a distance of seven or eight miles, and witnesses saw it when within two miles of its destination, walking in the most painful manner and steaming with perspiration. Next morning a policeman found a horse's foot (not a hoof) near where the animal had been seen the previous night, and by splashes of blood the horse was tracked to the knacker's yard, where it had just been killed. The limb, minus the foot, was in a very bad condition, being swollen as high as the knee and much contused. The hoof contained the pedal bone, which was fractured into several pieces. Grit was imbedded into the articular cartilage on the lower end of the os coronæ, showing that the horse had placed it on the ground. The knacker appealed against the decision of the magistrate and the case was reheard in a higher court. The defendant, it was rumoured, was not a poor man, and money would obtain him an acquittal. Veterinary surgeons appeared for the prosecution and gave it as their opinion that it was a case of gross cruelty; a larger number were engaged by the knacker, and swore that the horse suffered no pain at all—this opinion being based on the assertion of the owner of the horse, that it had been neurotomised three years before—but these experts had no other proof, and they had not seen the foot or limb. The horse had been sold to the knacker because it was *incurably lame in the foot*. The judge, after making the usual disparaging remarks as to the value of the scientific evidence, put this altogether out of consideration in the case before him, and concluding that the knacker did not know the horse was going lame (!), reversed the magistrate's decision, acquitting the knacker.

This state of affairs is very discreditable to our profession, and it is all the more painful to its well-wishers when it is rumoured that expert evidence, for or against, in any law case can be purchased for money. It is not for us to say what personal motives may induce or impel veterinary surgeons to give technical evidence on oath, but certain it is that such evidence should not be influenced by monetary or partisan views; but should be given conscientiously and truthfully, according to the facts presented. To aid in defeating justice is what no honourable man would descend to; and no greater injury can be inflicted on the veterinary profession than is caused by contradictory expert evidence in law trials. When judges cast such evidence to one side as worthless, and accept that of laymen who are perhaps themselves personally involved in the issues, it must lead the public to ask

whether we know any better about our business than those who do not claim to be specially enlightened.

Surely such painful scenes in the witness-box might be avoided if care were taken to be assured of all the facts, and to examine them according to scientific teaching. The Royal College would render a great service if it would take this matter of expert evidence in hand, and attempt to devise some way in which this grave disgrace might be abolished. Surely an expert should be held responsible to his profession for the opinions he emits in a court of justice! The public looks to our Corporation for protection against unprofessional conduct in law courts, as well as elsewhere.

THE EPIZOÖTY OF MANGE IN QUEENSLAND AND NEW SOUTH WALES.

THE extraordinary outbreak of Scabies among horses in the Colonies of Queensland and New South Wales, has received a large amount of attention from those chiefly concerned, and especially from the Colonial Governments. We learn, from a report by the Chief Inspector of Stock, Mr. P. R. Gordon, to the Colonial Secretary of Queensland, that the disease is disappearing from the districts it first visited, and that, too, among animals which had not been submitted to medical treatment. From inquiries instituted by Mr. Gordon, it results that the cutaneous affection was widely distributed—extending from the shores of the Gulf of Carpentaria to the Tweed River, and for many miles south along the New South Wales coast; while in another direction it prevailed from the eastern seaboard westerly, to the 146th degree of longitude. It appeared in a more virulent form on the coast watershed than west of the main coast range—a circumstance attributable, it is noted, to the greater humidity of the atmosphere; it also assumed a more virulent character in the northern coast districts than in the south.

Doubt still seems to exist as to whether the parasite was animal or vegetable, but it is remarked that in scrubby country, where the atmosphere and other surroundings are most favourable to the development of fungoid growths on plants, the affection was much more severe, and was less amenable to treatment than in open country, and it was in such localities that it appeared to any extent in cattle. The only instance in which it manifested itself in sheep was in the Fassifern scrub. Very few cattle contracted the disease, the largest number on any run being estimated at four per cent. of the herd, and then so slightly that it did not reduce their condition.

The contagiousness of the malady was a matter for doubt, many of those who favoured Mr. Gordon with replies, and who had most experience of it, being of opinion that it was not transmissible.

"Hundreds of cases are cited of clean and badly-affected horses that have for years been worked in the same teams, groomed with the same brushes, fed in the same stalls, grazed in the same paddocks, and where the saddles, saddle-cloths, and harness have been used on clean and diseased horses indiscriminately, without the disease having been communicated to the clean horses.

"There is a general concensus of opinion that stabling, dry, hard food, and cleanliness is the only effectual remedy for the disease, and this appears to have been demonstrated to a certainty in the north. There are in stables, as a matter of fact, greater facilities for the disease being communicated by

means of litter and stable-fittings than in the open bush, and yet horses that are constantly stabled and properly groomed not only do not contract the disease, even when in contact with it, but there has been no difficulty in curing those that have been suffering severely from the disease on the grass, when taken up and properly fed and groomed. Cleanliness and protection from dews and the night air appear to be the sole agencies in effecting the cure in such cases.

"It has been noticed that horses suffering from the disease, on the coast, rapidly recover when sent west on to saltbush country, and it has been suggested by several northern gentlemen whether some internal treatment is not indicated by this fact. In such instances, however, the mere change of climate and quality of food would appear to have effected the cure, as we find the disease prevalent, although in a comparatively mild form, in horses constantly pastured in saltbush districts.

"As already stated, I deem the information I have received from the northern districts of special importance, and there is a remarkable unanimity in the replies of northern stockowners on the subject. Their experiences may be stated under two classifications: Those possessing only a few head of working horses, and those who own large studs of unbroken horses. Both classes report that the disease is rapidly dying out. Those whose experience of the disease has been confined to a few working horses in or near the northern port towns state emphatically that stabling, cleanliness, frequent washings with soft soap and water, and proper grooming never fail to effect a cure, without the application of any special specifics.

"In the case of large studs, it appears that on many runs, where two years ago the disease was very prevalent, it has now almost completely disappeared, and without any dressing having been applied, and it is worthy of special note that on some of such runs the disease has proved most obstinate in the case of horses that have been dressed with the usual applications; the inference would therefore appear to be that, when checked in its course, it will re-appear annually for a series of years."

Many remedies had been tried, but none were found to act as a specific. One experimenter, however, asserted that he had never failed to effectually cure it with one dressing of caustic soda dissolved in hot water and applied hot.

The disease was not fatal, and it does not appear to have interfered much with the utilisation of the affected animals, except when the skin was seriously injured by the excessive rubbing to allay constant irritation.

At the conclusion of his report, Mr. Gordon states that the affection is rapidly extending southwards along the New South Wales coast, but a doubt is expressed as to whether the conditions along the southern coast of Australia are favourable to its development.

NEW BUILDINGS AT THE ROYAL VETERINARY COLLEGE.

THE existing premises being scarcely capacious enough for the work the Royal Veterinary College now finds to do, a new range of buildings, of which the Duke of Cambridge laid the foundation stone on June 7th, will forthwith be built. The estimated cost is about £7,000, and the accommodation to be provided includes a ride wherein horses can be galloped to test their wind; and over this ride will be the theatre, capable of seating about 350 persons. Adjoining the theatre will be private rooms for the professors, the laboratory, reading rooms, and a library. The architect is Mr. A. Vernon, and the builders are Messrs. Bywater.

On the arrival of the Duke of Cambridge, he was received by the governing body of the college, and on reaching the marquee in which the proceedings were to take place, Sir Nigel Kingscote made some prefatory remarks, in which he sketched the rise and progress of the college. When the college was founded in 1791 there were but fourteen pupils, whereas there are now upwards of 300. The staff was also on a small scale; but there were fifty horses in the infirmary, and, curiously enough, the number had not materially increased since, though students have grown more and more numerous of late years, rendering the enlargement of the premises a matter of necessity. The governing body had hitherto shrunk from going to the expense of new buildings, because their lease was rapidly drawing to an end; but a fresh one for ninety-nine years had now been granted by the Ecclesiastical Commissioners. The first president of the college was the Duke of Northumberland, and its first patrons were the Prince of Wales (George IV.) and the Duke of York. The second president was the Duke of Cambridge, father of the present duke. He might mention that there was one branch of the work of the college which must have an interest for the public—the careful examination of horses and other animals, and the 910 subscribers who originally availed themselves of the privilege of thus having examinations made had now increased to 952; but he thought still more publicity was needed. On two days in the week advice was given gratis to those who could not afford to pay the ordinary fees. In conclusion, the speaker thought that the veterinary profession was much more necessary to-day than it was years ago. Veterinary science was now extended to animals other than horses, and rightly so, for cattle, sheep, and pigs now realised large prices, and their health was a matter of great importance to their owners.

Mr. Powys, the secretary, having read a list of articles deposited in the cavity,

The Duke of Cambridge formally laid the stone; after which Professor G. T. Brown, C.B., proposed a vote of thanks.

In responding, His Royal Highness expressed the pleasure he felt in attending to lay the foundation-stone of what would prove to be a valuable addition to the institution. After what had been uttered by Sir Nigel Kingscote, there was nothing more left for him to say, except that he quite agreed with him, and he was sure the governors were quite in accord with what had fallen from Sir Nigel. Veterinary science had made considerable strides in accordance with the general progress of the times, and, after all, it was only right that we should extend to dumb animals the advantage of this progress. They cannot speak for themselves, yet they have an equal right with ourselves to be considered. Among those present were the Earl of Coventry, the Earl of Portsmouth, Lord Ribblesdale, Earl Fortescue, Viscount Bridport, Viscount Hardinge, Lord Stalbridge, Gen. Sir F. Fitzwygram, Mr. Walter Gilbey, Sir Jacob Wilson, Sir Nigel Kingscote, K.C.B., Dr. Fleming, C.B., Mr. J. Arkwright, Mr. Barnard Holt, Mr. E. Marjoribanks, Mr. Howard Vincent, M.P., Mr. Albert Brassey, etc.

The ceremony of Saturday last is the most recent event in the history of an institution having a record of nearly a century. The establishment of a Veterinary College, like those which had previously existed in other countries, was advocated by Mr. St. Bel prior to the year 1791, in which year the Veterinary College was founded. Mr. St. Bel's proposals were circulated about, and the outcome was a meeting. In due course the college was established, and Mr. St. Bel became professor. In April, 1792, tenders were received from six builders, and Messrs. Howard and Co. undertook to build some stables, on a piece of ground at St. Pancras, almost before the new venture was fairly launched. Mr. St. Bel—his real name was Vial, the

name of his native village being added—died, his decease being a great blow to the newly-formed institution, and it was not without great difficulty that a new professor could be found. Mr. Moorcroft, a veterinary practitioner of high repute, was at first unwilling to undertake the office, and Mr. James Clark, of Edinburgh, was unable to give up his northern connections. In this strait the committee bethought themselves of trying to bring forward one of the medical profession, and eventually Mr. E. Coleman, then little more than an amateur in the veterinary art, offered himself, and Mr. Moorcroft consented to become joint professor to aid and assist Mr. Coleman. After a short era of this partnership Mr. Moorcroft resigned, Mr. Coleman worked with energy, and obtained a Government grant, which was continued for many years.

It may be observed that a special department of comparative pathology and research is to be established, in connection with the new buildings, under a grant of £500 per annum from the Royal Agricultural Society of England, the principal object being the investigation of epizootic diseases, which attack animals of the farm and cause extensive losses to the farmer. It is intended that the building operations shall be concluded before October 1st, on which day the next session will commence.—*The Field.*

BICHLORIDE OF MERCURY FOR SPAVIN.

In the *Zeitschrift fur Veterinärkunde*, Veterinary Surgeon Schmole recommends Bichloride of Mercury and Vaseline (1 to 6) as an application to Spavins. This ointment, when rubbed into the skin over the tumour, operates in a very active manner, but it does not cause removal of the hair.

A NEW DOG-MUZZLE.

Mr. Woodroffe Hill, F.R.C.V.S., of Hastings, has successfully endeavoured to minimise the discomfort of muzzling by producing a muzzle constructed out of a solid piece of leather, thus avoiding the friction and irritation so often resulting in wounds occasioned by the rivets and unions which exist in the ordinary muzzle.

Its claim to be the most humane muzzle yet produced is fully justified, whilst its simplicity, lightness, and efficiency should recommend it to every member of the dog-loving public in those districts where muzzling is enforced.

THE REGISTRATION OF HORSE-SHOERS.

On May 2nd an influential and successful meeting was held at the Mansion House, London, under the auspices of the Worshipful Company of Farriers, for the purpose of promoting the scheme for the registration of horse-shoers. The Lord Mayor was in the chair, and explained the object of the meeting and the benefits likely to be derived from its achievement. After statements by Mr. Wynne Baxter, the Secretary of the Company, and Mr. Smith, its Acting Master, Lord Moreton, President of the Royal Agricultural Society, moved the following resolution: "That in the opinion of this meeting it is highly desirable that arrangements should be made to promote the technical instruction and systematic registration of farriers or shoeing-smiths throughout the country." Mr. Burdett-Coutts, M.P., Mr. J. Colam, Secretary of the R.S.P.C.A.,

and Colonel Grattan seconded and supported the resolution, which was carried.

Sir John Thorold, Bart., moved: "That this meeting generally approves of the scheme, prepared by the Worshipful Company of Farriers, and amended in conference by the Worshipful Company, the Royal Agricultural Society, and the Royal College of Veterinary Surgeons." Mr. Cohen seconded the resolution, which was supported by Mr. Clay and Sir Henry Simpson, and unanimously carried.

Professor Axe moved: "That this meeting recommends that the Worshipful Company of Farriers proceed at once to organise the Registration Committee, and take all other necessary steps to carry out the scheme, and that subscriptions be invited from the public towards the expenses of carrying out the scheme." Mr. Alderman and Sheriff Knill seconded, and Dr. Fleming, C.B., supported the resolution, which was also carried unanimously.

A vote of thanks to the Lord Mayor closed the proceedings.

NEW FELLOWS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

An examination for the Fellowship of the Royal College was held in Glasgow on May 26th, when the following gentlemen passed:—C. Phillips, Esq., A.V.D., Piershill; J. A. Dewar, Esq., Aberdeen; A. J. Haslam, Esq., A.V.D., Athlone; A. W. Mason, Esq., Leeds.

EXAMINATIONS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

At meetings of the Court of Examiners, held in London on and between May 13th to 16th, the following students from the Royal Veterinary College passed their Examinations, and were admitted members of the profession:—

Mr. L. F. L. Savournin	Buckingham Palace Rd., W.
„ J. H. Hind	Melton Mowbray.
„ A. D. Lalor	Hampstead, N.W.
„ J. A. Leggett	Regent's Park Road, N.W.
„ G. B. Wills	Stroud Green, N.
„ J. H. Booth	Oran, Catterick, Yorks.
„ G. H. Bishop	Bedminster, Bristol.
„ B. P. Boyle	Towcester.
„ A. E. Roberts	Tintern, Chepstow.
„ H. J. Farnham	Bridport, Dorset.
„ F. W. Greenlaw	Mannamead, Plymouth.
„ E. J. Fowler	West Green.
„ H. S. Smith	Usk, Monmouthshire.
Capt. G. H. Farrell	Hyderabad, India.
Mr. J. B. Tutt	Wishford, Salisbury.
„ F. L. Somerset	Doncaster.
• „ M. A. Hutchence	Penshurst, Kent.
* „ J. E. Row	Paignton, S. Devon.
„ F. M. Hill	Hellingley.
„ T. C. Garry	Clapham, S.W.
„ F. H. R. Bunbury	Paddington.

Mr.	F. E. Place	Southwell, Notts.
„	E. Morgan	Machynlleth.
„	D. Pugh	Penclavidd.
„	J. McT. McCall	Glasgow.
„	W. Skaife	Montreal, Canada.
„	E. Porter-Smith	Clapham, S.W.
„	J. Gosling (These have not yet complied with the rules of the	
„	H. T. Armstrong) College.	
„	W. K. Stuart	Brighton.
„	C. B. Harris	London.
„	F. J. Carless	Stafford.
„	F. Gregory	London.

The following students passed their Second Examination :—

Mr.	A. S. Westworth.	Mr.	A. Brown.
* „	J. E. Shacklock.	„	C. W. Howard.
„	J. Limbrick.	„	W. A. Stanway.
* „	A. Hawes.	„	J. F. Kemp.
„	C. W. Brown.	„	G. C. Lowe.
„	A. G. Hillier.	„	P. J. Welsh.
„	W. Collinson.	„	H. A. Sullivan.
„	A. H. Lane.	„	N. P. Horsley.
„	W. H. James.	* „	W. M. Dobbings.
„	A. P. Case.	„	I. Maguire.
„	S. H. Thorn.	„	T. J. Arman.
* „	F. G. Sikes.	* „	W. Wadsworth.
„	W. B. Edwards.	* „	T. A. Ford.
„	J. H. Lockwood.	„	D. P. Davies.
* „	W. W. Grasby.	* „	G. H. Williams.
† „	J. W. Reynolds.	* „	C. Edmonds.
„	A. M. Ward.	„	J. Shepherd.
„	J. Toms.	* „	J. H. Manton.
„	H. T. Sawyer.	* „	G. J. Harvey.
* „	J. H. Taylor.	„	G. D. Norman.
„	G. H. Martin.	* „	W. R. Mills.
* „	M. T. Sadler.	* „	A. England.
„	A. E. Clarke.	„	W. T. Cade.
„	F. W. Wilson.	„	F. Hobday.
„	A. E. Bayley.	„	H. Sessions.
„	A. J. Catteli.	„	F. B. Eve.
* „	A. Crafts.	„	E. R. James.
„	C. C. Abram.	„	J. E. Wallis.

The following students passed their First Examination :—

†Mr.	A. G. Grist.	Mr.	H. J. Collins.
„	W. D. Wallis.	„	H. E. Passmore.
„	W. H. Hunting.	„	A. L. Wilson.
„	R. Youngs.	„	G. A. Hewitt.
„	T. W. Lloyd.	„	W. James.
„	J. Hawkesworth.	„	W. H. Herford.
„	H. G. Westgate.	„	J. H. Ward.
† „	W. T. Broad.	„	F. W. Thompson.
* „	J. B. Young.	* „	G. H. Lamb.
„	A. Blake.	„	W. F. Widden.
„	J. Parkinson.	„	F. F. Hornby.

Mr. F. Scott.
„ E. G. Robertson.
„ F. W. Hunt.
„ R. J. Ring.
„ H. L. Tidey.
† „ W. S. Maynard.
† „ S. E. Broad.
* „ F. L. Clunes.
„ P. S. Falshaw.
* „ H. W. P. Dollar.

Mr. E. T. Pearce.
„ J. W. Pritchard.
„ C. J. Reakes.
† „ W. Stapley.
„ W. C. Watts.
„ F. G. Relf.
„ H. F. Downe.
„ E. M. Dixon.
* „ G. E. Bath.
„ H. S. Leonard.

Marked thus * passed with great credit.
„ „ † „ „ very great credit.

ARTHUR W. HILL, *Sec.*

At meetings of the Board of Examiners held in Edinburgh and Glasgow, on and between May 21st and 29th, the following gentlemen passed their final examination and were admitted Members of the Royal College of Veterinary Surgeons :—

Glasgow Veterinary College.

Mr. P. J. Austin	Glasgow.
„ J. Barrowman	Glasgow.
„ A. Campbell	Newtonards, Co. Down.
„ W. H. Davidson	Ibrox, Lanarkshire.
„ P. Gillespie	Strathbungo, Lanarkshire.
„ W. M. Hutchinson	Markethill, Armagh.
„ T. Jarvie	Wishaw.
„ J. Kirk	Dumfries.
„ A. Renfrew	Hurlet, Renfrew.
„ J. Thompson	Ballnahinch, Co. Down.
„ J. K. Thompson	Londonderry.
„ S. R. Thompson	Dundrod, Antrim.
„ A. Veitch	Prestwick, Ayr.
„ G. Waddell	Glasgow.

Dick College.

Mr. J. Aikin	Newcastle.
„ W. Ackroyd	Halifax.
* „ A. Breakell	Garstang, Lancashire.
„ C. Byner	Staplecross, Sussex.
„ E. Bowman	Edinburgh.
„ L. H. Fairer	Kirby Stephen.
„ C. E. Gray	Portobello.
„ J. Higginson	Shrewsbury.
„ R. Milne	Cupar, Fife.
„ A. Paterson	Ballater, Aberdeenshire.
„ R. G. Robertson	Dunfermline.
„ D. Stranaghan	Belfast.
„ W. Sherriff	Hawick.
„ G. Sinclair	Bathgate.
„ W. Weston	Grantham.

New College.

Mr. J. W. Bate	Sutton, Cheshire.
„ F. Cosgrove	Chester.
„ W. Kendall	Barrow-in-Furness.

Mr.	J. Lindsay	Kelso.
„	A. McGregor	Crieff.
„	E. Murray	Driffield, Yorkshire.
„	J. H. Parker	Leadgate, Durham.
„	C. Ward	Penrith.

The following gentlemen passed their Second Examination :—

Dick College.

Mr.	V. Banks	Mr.	G. Jarrett.
„	J. Brown	„	J. Ker.
† „	A. Burnfield	„	P. Mullane.
„	C. Baxter	• „	J. Pringle.
„	J. N. Carmichael	„	A. Pottie.
• „	J. Davidson	„	M. Pottie.
„	D. S. Davidson	• „	J. Paton.
„	H. Eve	• „	W. Pye.
„	J. Griffith	† „	J. Park.
„	J. Garvic	„	W. J. Richardson.
„	J. Henderson	„	D. Ritchie.
* „	T. Hoggan	• „	W. Sturdy.
„	W. Hamilton	„	W. Stewart.
„	J. W. Hudson	„	E. Thurburn.
„	R. Holmes	„	G. A. Thomson.

New College.

Mr.	G. W. Balfour	• Mr.	R. E. Johnstone.
• „	J. Carpenter	„	J. A. Lyons.
• „	J. Connochie	„	J. H. Siddle.
„	R. Eagleshaw	„	W. Sime.
• „	M. Fitzgibbon	„	A. A. Todd.
• „	C. Haywood	„	J. M. Young.

Glasgow College.

Mr.	A. Campbell	Mr.	J. A. Jordan.
„	R. Campbell	„	F. J. Lennox.
„	J. Douglas	• „	T. F. McDonald.
„	S. E. Dunn	„	W. Marshall.
„	J. Forrest	„	S. Martin.
† „	J. A. Gilruth	„	J. W. Neill.
„	A. Greenhill	„	W. Packmann.
* „	A. Hamilton	„	S. C. Pottie.
„	C. T. Holmes	• „	J. D. Walker.
„	J. E. Johnstone		

The following gentlemen passed their First Examination :—

Dick College.

Mr.	G. Ashe	† Mr.	C. R. Neale.
„	W. Blanchard	„	A. P. Ord.
„	R. Beilby	† „	W. Robertson (Edin.)
* „	P. Dardis	• „	G. W. Sturgess.
„	W. Doyle	„	J. W. Senior.
• „	R. N. Flannery	† „	P. L. Smyth.
„	J. A. Hepburn	„	R. Stordy.

Mr. C. Hay
† „ T. Healy
„ P. Kearney
„ J. Little
† „ F. McRoberts
* „ J. McIntosh
* „ A. McFarlane

Mr. W. Scott.
* „ S. R. Tufts.
„ F. W. Taylor.
„ T. Threekeld.
„ A. F. Walshe.
„ W. Walker.

New College.

Mr. J. M. Arthur
„ E. W. Anderton
† „ O. C. Bradley
„ G. Ellis
„ J. Evans
„ A. P. Gribben
„ G. W. Hewetson
„ G. B. Holden

Mr. R. T. Hutchinson.
* „ F. B. Pearson.
„ H. Percival.
* „ E. Plant.
„ C. S. Smith.
„ E. H. Stent.
„ G. M. Williams.
„ E. E. Wood.

Glasgow College.

Mr. R. Aitkenhead
* „ A. Crabb
* „ W. Dawson
* „ J. Furniss
„ J. Gillies
„ D. Hamilton
„ G. Irvine
„ A. Jackson
„ D. Lochead
„ J. M. Mark

Mr. J. McDougall
* „ J. McKie.
* „ W. McMurray.
† „ A. McNairn.
„ J. E. Pottie.
„ W. O. Robertson.
„ D. Stewart.
„ G. Steuart.
„ F. Waddington.

R. RUTHERFORD, F.R.C.V.S.,
Secretary to Board of Examiners in Scotland.

Marked thus * passed with great credit.
„ „ † „ „ very great credit.

THE ANNUAL DINNER OF THE ARMY VETERINARY DEPARTMENT.

THE annual dinner of the Officers of the Army Veterinary Department was held at the Metropole Hotel, on June 20th, under the presidency of the Principal Veterinary Surgeon. It was a most agreeable meeting, and the number of officers present was unprecedently large, owing to this being the last occasion on which Dr. Fleming would preside, his retirement from the Army taking place on the 28th of that month.

There were present: Principal Veterinary Surgeon Fleming, C.B.; Inspecting Veterinary Surgeons Lambert, Oliphant, and Walters; Veterinary Surgeons, first-class, Thomson, Queripel, Oliver, Kettle, Reilly, Hammond, Glover, Woods, Wilson, Evans (J. W.), Jones, Whitfield, Burton, Longhurst, Spooner, Anderson, Mills, Edwards, Pallin (D. C.), Morgan, Ringe, Killick, Moore, Raymond, Day, Lees, Short, Mann; and Veterinary Surgeons Kelly, Appleton, Braddell, Drage, Moore, and Stratton. The following retired officers also appeared on the occasion: Inspecting Veterinary Surgeon C. Steel, and Veterinary Surgeons Gibbs and Pallin. Captain Beech, C.M.G., 20th Hussars, commanding the Egyptian Cavalry, and late of the Department, joined the company, and was warmly welcomed by his former colleagues.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

PROFESSOR J. WORTLEY AXE, President, in the chair.

A SPECIAL Meeting of the Council was held at 10, Red Lion Square, Bloomsbury, W.C., on 3rd June, 1890. Members present: Professors W. Duguid, J. McCall, J. Penberthy, Thos. Walley, W. Williams, Gen. Sir Frederick Fitzwygram, Bt., Sir Henry Simpson, Dr. Geo. Fleming, C.B., and Messrs. J. D. Barford, Thos. Briggs, B. Cartledge, J. Roalfe Cox, Thos. Greaves, W. Hunting, H. Kidd, J. D. Lambert, W. J. Mulvey, Thos. H. Simcocks, Jas. F. Simpson, Peter Taylor, R. C. Trigger, W. Whittle, W. Wilson, F. W. Wragg, Geo. Thatcher (solicitor), and A. W. Hill (secretary).

The SECRETARY stated that he had received a letter from Mr. Woods regretting his inability to attend the meeting. He also read some correspondence from the Principals of the Schools, with regard to the alterations in the proposed Revised Regulations.

The PRESIDENT informed the Council that the meeting had been convened for the purpose of considering, and, if deemed advisable, of passing the proposed Revised Regulations for the Examination of Veterinary Students in General Education, as follows;

1. Students who enter the Veterinary Schools shall, prior to their first professional examination by the Royal College of Veterinary Surgeons, undergo an examination in the undermentioned subjects, or produce a certificate of having passed one of the following examinations:—

(1) For matriculation, or any higher examination for degrees, or one of the "local examinations" held by a University in the United Kingdom, or by a Colonial or Foreign University recognised by the Council of this College.

(2) For the certificates of the first or second class granted by the College of Preceptors.

(3) An examination recognised by the General Medical Council as exempting candidates from the preliminary literary examinations of the various medical corporations; or a certificate of examination by the Incorporated Law Society; or the preliminary examination of the Pharmaceutical Society.

(4) 1. Intermediate Education Board of Ireland. 2. Apothecaries' Hall, Ireland. 3. Military, Naval, Civil Service, Marine, and Divinity—any part of the United Kingdom.

Provided the subjects mentioned in the certificates are those laid down by the Royal College of Veterinary Surgeons.

2. Students who do not produce one or other of the certificates referred to shall be examined by a Board of Examiners appointed by and under the direction and supervision of this College, to whom they shall report the result of the examination, which shall be uniform and applicable to the whole of the United Kingdom. The nature and extent of this examination shall be fixed by the Council from time to time. It will be of two classes of subjects—one *obligatory*, and the other *optional*.

The following are the subjects of examination:—

PART I.—*Obligatory Subjects.*

1. Reading aloud.
2. Writing from dictation.
3. English grammar, with parsing and composition.
4. Arithmetic—the simple and compound rules, with vulgar and decimal fractions.
5. Either outlines of English history, *or* geography of Europe and the British Isles.

6. One of the following foreign languages :—
(*a*) Latin : First Book of Cæsar's Commentaries, *or* an alternative "unseen" paper.
(*b*) French (no set book).
(*c*) German ditto.

PART II.—*Optional Subjects.*

1. Euclid, Book I., or the subjects treated therein.
2. Algebra to quadratic equations.
3. Natural history : zoology, botany, physiology (one branch only).
4. Inorganic chemistry.
5. Mechanics.
6. Any of the specified foreign languages not taken as obligatory.

He formally moved the acceptance of the foregoing regulations.

Mr. J. ROALFE COX suggested that sub-section 2 of section IV. be altered as follows :—"Provided the subjects mentioned in the certificate embrace those laid down by the College."

Professor WILLIAMS thought it would be advisable to omit the paragraph altogether.

On the motion of Mr. BRIGGS, seconded by Mr. SIMCOCKS, it was resolved that the paragraph should be expunged.

On the suggestion of Professor WALLEY, it was agreed that the paragraphs should be taken *seriatim* and discussed.

On the motion of Mr. BARFORD, seconded by Mr. J. F. SIMPSON, paragraph I. was adopted.

Mr. KIDD said there was a slight ambiguity with regard to paragraph II., and he suggested that any division of the first class of the College of Preceptors examination should be taken, and also the first division of the second class. Professor PENBERTHY seconded the proposal.

Dr. FLEMING, in supporting the proposal, said that in these days of cheap education it was imperative that young men coming up for diplomas should be properly educated.

Professor WALLEY said he thought 50 per cent. of marks should be taken instead of 30. The higher they went the better, so long as the students had time.

It was resolved that paragraph II. should read thus :—"For the Certificates of the First-Class, or the First Division of the Second-Class granted by the College of Preceptors."

Professor WALLEY moved that paragraph III. remain unaltered. Mr. BARFORD seconded the motion.

Mr. BRIGGS moved as an amendment that the words "Preliminary Examination of the Pharmaceutical Society" be struck out.

Mr. J. F. SIMPSON said that if Mr. Briggs could assure him that the Preliminary Examination of the Pharmaceutical Society was really a low examination, he should be prepared to second the amendment.

Professor PENBERTHY said that the examination was inferior to their own first-class certificate of the second division ; the only thing to be said in its favour being that it gave 40 per cent. of marks for passing instead of 33. It would increase the number of students coming into the profession through that lower and more simple examination, and the College would be losing a great deal by not getting the fees for the Matriculation Examination, for it would have to pay the College of Preceptors considerable sums for carrying on those examinations.

The amendment having been put to the meeting and lost, the original motion—that the paragraph remain unaltered—was then put and agreed to.

Professor WALLEY moved the acceptance of paragraph IV. Professor DUGUID seconded the motion.

Mr. SIMCOCKS moved as an amendment that after the words—"Intermediate Education Board of Ireland," the words "senior or middle grades" be added; and that the certificate of the Pharmaceutical Society of Ireland, and of the Incorporated Law Society of Ireland be also accepted. Mr. LAMBERT seconded the amendment.

Mr. MULVEY reminded the Council that when the Committee appointed by the Council to consider the matter met, they had with them the representatives of the College of Preceptors, and that the explanations given by those gentlemen with regard to the various certificates had satisfied the Committee, in fact they had accepted the statement of experts.

Gen. Sir FREDK. FITZWYGRAM said that the Committee which had been appointed had no doubt thoroughly investigated the matter, and he conceived it to be the business of the Council, when it received the report from the Committee, either to accept or refuse the broad grounds upon which the Committee had done their work. He did not think it advisable to discuss the details of the results at which the Committee, after full consideration, had arrived.

Mr. J. F. SIMPSON said he agreed to a great extent with Gen. Sir Fredk. Fitzwygram, but when he saw the College of Preceptors recommending them to accept the preliminary examination of the Pharmaceutical Society, which undoubtedly was far inferior to the examination that the Royal College demanded to be passed by an intending student, he thought it was the duty of the Council to criticise the suggestions made by the College of Preceptors.

It was resolved that paragraph IV. should read as follows:—"(1) Intermediate Education Board of Ireland; senior or middle grades. (2) Apothecaries' Hall, Ireland. (3) Military, Naval, Civil Service, Marine, and Divinity —any part of the United Kingdom."

On the motion of Mr. LAMBERT, seconded by Mr. PETER TAYLOR, it was resolved that the first part of the next paragraph should read as follows:—"Students who do not produce one or other of the Certificates referred to, shall be examined by a Board of Examiners appointed by and under the direction and supervision of this College. The examination shall be uniformly applicable to the whole of the United Kingdom, and the result of the same shall be reported to the Council.

Professor WALLEY moved the acceptance of the next portion of the paragraph:—"The nature and extent of this examination shall be fixed by the Council from time to time." He further proposed that what followed should be struck out, so as to do away with the optional subjects which were utterly useless, and were not required for any practical purpose. Mr. WHITTLE seconded the proposition.

Mr. HUNTING said he was greatly surprised to hear it announced that the optional subjects which had been on the list for some years, were useless. If they were not of use, instead of knocking them out let the Council make them of use. Only the other day the General Medical Council had discussed the same subject, and the President had drawn attention to the fact that notions of education were altering, and he pointed out that if there were obligatory subjects and optional subjects, the obligatory subjects should be small in number, but that thoroughness should be insisted upon; and, at the same time, that there should be optional subjects, so as to allow men who had many good points in some of the optional subjects, although they might be deficient in some of the obligatory ones, to have a fair chance of entering the profession. If Latin, for instance, were insisted upon, a good scholar in French or German might be rejected, whereas he might be worth double of what a student was worth who had passed in Latin. He would suggest, instead of the op-

tional subjects being expunged, that marks should be allowed to students for those various subjects.

Professor WALLEY said that when the optional subjects were placed in the regulations, it was intended that they should be accepted in lieu of the educational examinations for the Fellowship degree, and they had never been removed since that examination was altered. They had, however, as far as he knew, never been made the slightest use of; if they were made use of he would go heart and hand in retaining them in the list.

Professor WILLIAMS suggested that the obligatory subjects should be added, and to give the student a choice of ten, making five or six obligatory.

Professor MCCALL suggested that two certificates should be granted, namely, a certificate for obligatory subjects, and a higher class certificate for the optional subjects.

Professor WALLEY said that as a matter of fact, although the Educational Institute, not only in Glasgow but in Edinburgh, granted first, second, and third class certificates, it did not alter the fact that the third class certificate admitted a man, and the optional subjects did not help him in the least. The student had to pass 30 per cent. only in the obligatory subjects.

Mr. TRIGGER agreed with Mr. Hunting that optional subjects should be counted to the credit of the students, and that the examiners should award marks for them.

The PRESIDENT concurred in the idea that students should be encouraged to go in for the optional subjects.

Mr. HUNTING proposed that line 2 of optional subjects be deleted, and that a sentence be added to the effect that students should pass in any six subjects.

Professor WILLIAMS suggested that candidates should pass in six subjects, four of which should be obligatory.

Sir HENRY SIMPSON said that as a member of the committee who attended the conference held with the Dean of the College of Preceptors, he should like to point out that the committee felt that they were unable properly to lay down a curriculum without professional advice, and that professional advice having been obtained, he hoped the Council would not depart from what had been agreed upon by the committee after very careful consideration and discussion. A man might choose to go in for the obligatory subjects, and if he choose to go in for both the obligatory and optional, of course he received marks for both.

Professor WALLEY said that that course had hitherto never been acted upon.

Mr. MULVEY said that as there had been so many alte ations he would move as an amendment that the whole matter be referred back to the Committee for re-consideration.

Mr. HUNTING seconded the proposal.

Professor WALLEY thought that Professor Williams' suggestion would meet the difficulty, namely—that the candidates should pass in six subjects, four of which should be obligatory, and two optional.

The amendment was put to the meeting and lost.

Mr. WILSON said that a resolution had been carried by a large majority at the annual meeting, requesting that Latin should be made an obligatory subject in the examinations. He thought it would be advisable for the Council now to embody that subject. It would not come into operation before 1891, and therefore plenty of notice would be given.

Mr. LAMBERT moved that Latin be made an obligatory subject.

Mr. PENBERTHY seconded the motion.

Mr. HUNTING said that the old idea that Latin as a classical language was necessary for an educated man had been played out for more than thirty

years. A knowledge of French and German was of far more importance, for it would enable a student to read anatomy and physiology in those languages. On that ground he should most decidedly vote against Latin being made a compulsory subject.

Sir HENRY SIMPSON moved that the subjects should stand as they were with the alteration that in the obligatory subjects No. 6 should stop at sub-section A, and that French and German should be added to the optional subjects.

Professor WALLEY seconded the proposal.

Professor WILLIAMS reminded the Council that Latin was a dead language, whereas the best books on veterinary subjects were written in French and German. A student who had a knowledge of French or German was in the position of making himself a much better man than the best Latin scholar that ever lived.

Dr. FLEMING said he did not exactly know what the French schools required, but the German schools demanded a knowledge of Latin, and he also knew that the German professional works contained an abundance of Latin, nearly all the scientific terms being in that language. He looked upon a knowledge of Latin as of great value, but he did not the less say that a knowledge of French or German was also valuable. Personally, he would prefer to make Latin altogether compulsory, and then bring in French and German.

The motion that Latin should be made an obligatory subject was then put to the meeting and carried, 13 voting for and 9 against.

Mr. SIMCOCKS moved that either French or German be made an obligatory subject.

Dr. FLEMING seconded the motion, which was agreed to.

Dr. FLEMING moved the adoption of Part II.—Optional subjects.

Mr. PETER TAYLOR seconded the motion, which was agreed to.

On the motion of Professor WILLIAMS, seconded by Professor MCCALL, it was resolved that the Revised Regulations for the examination of veterinary students in general education should not come into operation until September, 1891.

Professor WALLEY said that at the last meeting and since, the standard of 50 per cent. of marks had been objected to as too high. He had been in consultation with Mr. McKay of the Educational Institute, and they were both willing to reduce the standard to 30 per cent. provided 50 per cent. was still retained for the English part of the obligatory subjects. There should not be less than 50 per cent. in "writing from dictation."

Dr. FLEMING observed that when the Committee met, the Dean of the College of Preceptors thought 50 per cent. too high, and suggested that it should be 45 per cent.

Mr. GREAVES suggested that it be left to the Examining Bodies to use their own discretion in the matter.

Professor WALLEY gave notice of motion that at the next meeting he would move that the regulation with regard to the standard of 50 per cent. of marks be rescinded.

The PRESIDENT said he thought it would be desirable to have the report of the Committee appointed to inquire into the subject read.

The SECRETARY read the minutes of the meeting of the Matriculation Examination Committee.

Sir HENRY SIMPSON said that the College was responsible for the examination papers which were set. It had occurred to him whether the College of Preceptors could not prepare a paper and then send it on to the Educational Committee, which should be a very representative one, containing all the Principals of the schools in Scotland if they happened

to be members of Council. The Royal College might ask the College of Preceptors to undertake the examination in England, and the Educational Institute might be asked to undertake the examination in Scotland. The papers would be identical. That, he thought, would be a practical way of getting out of the difficulty.

Professor WALLEY said that Sir Henry Simpson's proposal was identical with the suggestion he had only the previous day thrown out to Mr. McKay of the Educational Institute, who entirely concurred with the idea. He (Professor Walley) thought it was originally understood that it was to be a conjoint board.

Professor WILLIAMS thought the case would be met by the addition at the end of Part II. of the words: "Such examination to be conducted by the Royal College of Preceptors or the Educational Institute of Scotland."

Mr. WILSON said that the gentlemen who had attended at the committee said it was undesirable to have two examining bodies, for when one body was examining a great number of students might present themselves, whereas when another body was examining only a very few students might come up for examination.

The PRESIDENT said he could see no objection to the examination being conducted one year by the Educational Institution, and another year by the College of Preceptors.

Professor MCCALL said he thought the two bodies should be asked if they would conjointly conduct the examination, but if one institution declined to act with the other, he was of opinion that the Council ought to select the Educational Institute of Scotland. It would be a good plan for the College of Preceptors to set the papers one year and the Educational Institute the next, the papers to be uniform throughout England and Scotland.

Professor DUGUID asked who was to make the awards.

Professor WILLIAMS said that the details could be determined upon by the two Institutions.

Dr. FLEMING suggested that the secretary be requested to write to both of the bodies, asking them if they would kindly arrange to carry out the examinations.

This was agreed to.

Professor WILLIAMS called the attention of the Council to certain discrepancies in Bye Laws 7 and 17.

ELECTION OF PRESIDENT.

Mr. W. HUNTING said he had great pleasure in proposing Professor McCall as President of the College for the ensuing year. Circumstances had prevented that gentleman from taking the chair for two or three years, but now that he was able to do so he felt sure the Council would unanimously elect him. As far as seniority went he had no competitor, and he had certainly no competitor as far as position in the profession was concerned.

Mr. CARTLEDGE seconded the nomination, which was unanimously accepted. Professor McCall then took the presidential chair.

The PRESIDENT said he thanked the Council most sincerely for the honour they had conferred upon him in electing him President of the College. He always valued the position, and, had it been in his power to have accepted the position before, it would have given him great pleasure to do so; but he found that he could not discharge his many duties in Glasgow, and at the same time do what he thought was necessary as representing the College He was not only aware of the honour conferred upon him, but was fully alive to the responsibilities now devolved upon him. He was also alive to the lustre which had been shed upon the office by his predecessor, and he trusted that when the time came round for him to vacate the presidential chair that

lustre would in no way be diminished. It was scarcely possible that he could give satisfaction to every member of the Council during his term of office, but he assured them it would always be his best and earnest endeavour to promote the interests of the College and the profession generally.

Dr. FLEMING, in proposing a vote of thanks to the retiring President, said he was sure that the Council would all agree that Professor Axe had performed his duties to their entire satisfaction. The position of President of the Royal College of Veterinary Surgeons was an honourable one, but it was attended with unpleasantnesses and difficulties which it was the duty of the President to overcome. The retiring President had fulfilled to the utmost of their expectations the duties which the Council expected of him; and his patience and courtesy had been above all praise. The severe test to which Professor Axe had been put at the annual meeting would justify him in saying that he was a model President, and deserved their warmest thanks for the honourable manner in which he had performed his duties and conducted the business of the College.

Professor WILLIAMS seconded the vote of thanks, which was unanimously agreed to.

Professor AXE, in responding, said he was very much impressed with the observations which had fallen from Dr. Fleming, and which had been so cordially received by the Council. One tried to forget as much as possible the disagreeables, and to remember as much as possible the pleasures of office. The Council had not had before them many matters of any serious moment, yet there had been sufficient excitement to make the duties of the President agreeable, and at the same time these duties had been sweetened by the courtesy and kindness which had at all times been shown him by his fellow-councilmen. He thanked the Council most cordially for the vote of thanks which had been accorded to him, and he should always be pleased if he could think he had discharged the duties of the office in the way represented by Dr. Fleming.

ELECTIONS OF VICE-PRESIDENTS.

The PRESIDENT said that six Vice-Presidents had to be elected, and he should be glad to receive the nominations.

Messrs. Woods, Briggs, Kettle, Headley, Lambert, Axe, Malcolm, Carter, Walters, Rutherford, Russell, Raymond, Smith, Wilson, and Wheatley were nominated.

The ballot was then taken, and the voting was as follows:—Mr. Woods, 14; Mr. Briggs, 19; Mr. Kettle, 3; Mr. Headley, 4; Mr. Lambert, 18; Professor Axe, 2; Mr. Malcolm, 11; Mr. Carter, 5; Mr. Walters, 10; Mr. Rutherford, 11; Captain Russell, 5; Mr. F. Raymond, 4; Mr. F. Smith, 1; Mr. Wilson, 4; and Mr. Wheatley, 8.

The PRESIDENT declared Messrs. Briggs, Lambert, Woods, Malcolm, Rutherford, and Walters to be elected as the Vice-Presidents.

ELECTION OF SECRETARY AND REGISTRAR.

Professor WALLEY said he had great pleasure in proposing that the present excellent Secretary and Registrar, Mr. Arthur W. Hill, be re-appointed. The duties of the office could scarcely be fulfilled in a better manner than they were, and it was with great pleasure that he proposed Mr. Hill's re-election.

Professor WILLIAMS seconded the re-election, which was unanimously agreed to.

Mr. A. W. HILL, in acknowledging his re-election, thanked the Council most sincerely for their kind expression of opinion.

CENTRAL VETERINARY MEDICAL ASSOCIATION.

(In the last number of the Veterinary Journal, a report was given of the discussion of Prof. Hill's paper on Rabies. The following is his reply to the remarks of the several speakers.)

As far as lies in my power I will endeavour conscientiously and fully, but I hope without wearying you, to answer some of the objections which have been raised to the opinions expressed in the short paper I had the pleasure of reading to you at the last meeting.

Mr. Edgar opened the discussion on my paper with an expression of astonishment that I was of opinion Rabies might have a spontaneous origin. Now although, gentlemen, I admitted such an occurrence to be exceptional, I nevertheless still adhere to that opinion; for even in these days of advanced scientific research, I do not ignore the fact that every disease must have a beginning. How, when, and where has yet to be solved—even that keen physiological enquirer, Prof. Victor Horsley, observes—"How it originated is a mystery." I have been asked for proof of spontaneous Rabies, and as I never make a practice of asserting anything I cannot prove, I will give you some evidence of spontaneity. In 1877 I was requested to visit a small highly-bred toy terrier, belonging to a lady of title, which I found unmistakeably rabid; yet I was positively assured the dog could not possibly have been bitten, as it had never been out of sight, and was the constant companion of its mistress, who had received it from Her Majesty. Nothing, I was told, had been observed until after the animal had received some fowl bones, a portion of which was supposed to be located in the throat. On the fourth day after my first visit it was shot in an undoubtedly rabid state. Two other dogs, which had associated with it, shortly afterwards became affected and shared the same fate. I made the most careful enquiries into this case, but was informed most positively by the keeper, and also by the Earl, that no strange dog could have by any means had access to it, being always either in the bedchamber or boudoir. A fox terrier I had reared from a puppy and kept five years, was presented to a lady friend in a country district. He was placed in an out-kennel fenced in; nearly two years afterwards he died rabid, without the slightest evidence to show he had been inoculated from without.

Yet another: last year a very fat well-bred spaniel died from Dumb Rabies; but no mad dog had ever been in the district, and it was kept at the back of the house. I attended this case throughout, and from the time the jaw dropped to the setting in of paralysis in the hind quarters was five days.

A careful diagnosis is most important in such cases. I have frequently been called in to examine alleged mad dogs, possessing, it is true, some resembling symptoms of the disorder, but which a careful examination proved to have arisen from other causes. Upon one occasion a young fox terrier, hitherto playful and affectionate, became remarkably irritable, commenced to salivate, bit at itself and other objects, hid itself in corners, and from the amount of salivary collection barked in a husky croupy manner. The eyes were bloodshot and the throat livid. These symptoms were due to the poor creature having swallowed a wasp. Once in the street its fate would have been sealed, and the usual scare established.

On the day I read you my paper, I was astounded to see a report in the London dailies of a mad dog at Hastings, which, after biting a lady's cheek out, had its throat promptly cut by a butcher in Robertson Street, and the notices, which evidently emanated from the same source, wound up with the expression that it was but another illustration of the necessity of enforcing the muzzling order. Now at the very time this report appeared,

the dog in question, a harmless young fox terrier, was a patient in my hospital; it had been run over by a 'bus, receiving a compound fracture of the thigh and other injuries, and in its pain, when picked up by its mistress, just pricked her lip. It would be satisfactory to learn whether certain individuals are employed for the sole purpose of creating these scares for the purpose of obtaining the enforcement of the muzzling order, and if so, at whose instigation.

I am inclined to the opinion that consanguinity is a predisposing cause of Rabies. For in those dogs proved to have been inbred, Rabies and other nervous disorders have been more prevalent than in natural breeds. I need scarcely call to your mind the abnormally prominent forehead, hairless skull, protruding vacant eye, generally idiotic countenance, and epileptic tendency, which is seen in toy specimens of the canine race that have been "bred to death."

It is a well-recognised fact that, since the improvement (query) of breeds, the fashion of dog breeding, and the growth of canine exhibitions, Rabies, or what is alleged to have been Rabies, has correspondingly increased. I apprehend that no sound physiologist will deny that interbreeding is deleterious in more ways than one—that physical imperfections arise, and intellect is deadened. That inbred dogs, especially of the female sex, are subject to hysteria, I have had unquestionable proof; and we have it on the authority of one of the greatest physiologists of our time, that "many forms of that protean malady, *hysteria*, are attended with a similar irritability of the nervous centres" as occur in Hydrophobia; further, that the latter disease "is nearly allied to that of traumatic tetanus."

This is evidently an hysterical age, and persons of highly nervous temperament and excitable dispositions are prone to manifest certain symptoms indicative of Hydrophobia, or what Prof. Horsley terms "hysterical Hydrophobia," should they have the misfortune to be bitten by one of the canine species. I cannot see, gentlemen, why the nervous system of a physically weak and excitable dog should not be acted upon much in the same manner as in a physically weak and nervous human being, and in such a way as to excite symptoms strongly resembling Rabies. Again, it is known that certain conditions of the nervous system exert an influence on the secreting process of the salivary glands, and we know that in canine Rabies there is an abundance of such secretion, abnormally altered and containing deadly virus. In fact, it may be said that all the secretions are more or less influenced by the condition of the mind, so much so that in certain instances they become poisonous from chemical change, and lose entirely their individuality. May not this be so with the canine secretions? I assume that it will not be disputed that certain nervous conditions may hasten the death of a person suffering from rabid inoculation.

Mr. Edgar, in answer to my remark that no one had ever seen a mad dog with a muzzle on, replied, "Exactly—that proves that the muzzling order has not been efficiently carried out, for if the rabid dog had been muzzled he would not have been able to have bitten the other dog." Such an answer, however, is purely hypothetical, and, gentlemen, we are not here to deal with hypotheses, but facts. If a rabid dog can bend with his teeth, or bite through an iron bar, it is scarcely likely he would retain a muzzle. The same gentleman, in reply to my opinion that the best means of preventing or stamping out Rabies was a question for veterinarians and canine pathologists to deal with, asked, What was to be done whilst this vexed question was being decided? The immediate registration of every dog, associated with strict quarantine on imported dogs, is my answer.

Mr. Edgar misunderstood my remarks concerning the number of canine veterinary surgeons; my exact words were, "Laymen have discussed it, *i.e.*,

the prevention of Rabies, under the impression, *formed by the dog-owning public*, and not altogether unfounded, that canine veterinary surgeons can be counted on the finger ends. That the latter are few and far between must unfortunately be admitted." And, gentlemen, I venture to say that until canine pathology receives its entitled attention in the various veterinary schools, this condition of things or these impressions will continue to exist. Doggy men are keen in sounding the depths of the canine practical pathological knowledge of a man, whether he be a M.R.C.V.S. or otherwise. But assuming all veterinary surgeons to be canine pathologists, have they all had experience of Rabies? Many of our oldest and most exalted practitioners have never seen a rabid dog.

Finally, I can assure Mr. Edgar that anti-muzzlers are open to conviction, and I, for one, shall be very pleased to consider and urge the test of any new discovery of value for the extirpation of Rabies, which Mr. Edgar may favour me with his views on.

Mr. Samson ignores the cruelty aspect of the muzzle, and fails to see how it can ruin dogs. If Mr. Samson has studied canine character he must surely have observed the various dispositions that exist in dogs, not only of different, but of the same breed—morosely-inclined dogs are positively made dangerous by muzzling, and nervous dogs are rendered hysterical and epileptic—my own personal knowledge confirms such results. I recently saw a case in which hysteria and convulsions followed the application of the muzzle, and death ensued in three days. Three years ago I purchased a St. Bernard in London on account of the horrible torture he was enduring through the wounds caused by a wire muzzle. To this day he remembers that muzzle. Mr. Samson's remark, "I do not think we really know whether Rabies is or is not spontaneous," is a point in my favour. Its contagiousness no one of course denies.

Dr. Hartnell's suggestion that veterinary surgeons should enquire more into the genuineness of reported Hydrophobia cases is worthy of note, though I fear medical men will resent it, albeit they have no objection to poach on veterinary ground. It is, however, high time an antiquated impression still in existence on the public mind should be removed, viz., that hydrophobic individuals simulate the noises and habits of the animal from which they are inoculated.

There is as much truth in the tale of the man who, when attending church to return thanks for his recovery after the transfusion of goat's blood, ba-a-h'd, and butted the verger up the aisle, as there is in the recorded cases of alleged hydrophobic human beings mewing like cats and barking like dogs. On the same lines of argument, it would be only reasonable to expect a man inoculated by a rabid horse to neigh and kick, or if from a bull, to bellow.

I recollect a case some years ago in Staffordshire, where a man reported mad had been seen on his hands and knees tearing out tufts of grass from the bank and barking. When analysed, it was merely a drunken freak.

In conversation on this subject with Professor Arthur Gamgee, he said, "What might be mistaken for a bark, but it bore a very faint resemblance, was the hoarse expectoration of viscid saliva, or attempt of the patient to cough it away from the throat." Possibly, if medical men would study canine Rabies more fully, so many mistakes would not be made anent Hydrophobia, for on this subject, to use the words of an old and valued writer, "We have the link which most of all connects the veterinary surgeon with the practitioner of human medicine."

Mr. Rowe drew attention to the ridiculous picture of a pack of fox hounds, with their mouths at liberty, rushing down a lane and meeting a muzzled terrier, but did not say whether the terrier accompanying the pack

was muzzled. Sporting dogs should not be exempt: if muzzling be enforced, in common fairness it should be universal, and no law made for the rich and another for the poor.

Allusion was made by the same gentleman to the action of Mr. Chaplin towards the two Deputations he received on December 14th. Having referred to this through the columns of the *Standard*, I will merely add that I thoroughly endorse Mr. Rowe's remarks. It must be perfectly clear to any one that the Minister of Agriculture on that occasion did not assume a manly attitude. Had he then and there told us the question of muzzling had been decided, which it undoubtedly had prior to our reception, or better still, have notified that he could not receive the deputations, valuable time to many men would not have been wasted, and the enactment of a silly farce would have been avoided.

Mr. Woodger takes exception to my view of the cruelty of muzzling, but produces no satisfactory argument in defence of his objection. He remarked, "I have frequently gone into people's houses, and have taken up the muzzle in my hand (though why a professional attendant should make this a practice I am at a loss to understand) and directly I have done so, the dog has come to me to have his muzzle put on (Why, gentlemen? Mark Mr. Woodger's reply) because he wanted to go out—dozens of dogs have done that." Need I ask is that the slightest argument against the cruelty of the muzzle? A prisoner in the mines of Siberia would gladly welcome an increase of fetters, if their application meant open-air freedom. A weaker argument in favour of muzzling I never heard. Would the individuals who are so persistent in urging the muzzle, walk about cheerfully with their heads in a cage, if they believed it would stamp out Hydrophobia, or even if it became law to do so?

I have only to refer Mr. Woodger to my paper to prove that I made no allusion whatever to the production of Rabies by the muzzle.

He failed to tell us what became of his bitten client, who by Mr. Woodger's command could produce from his dog the characteristic mingled rabid bark and howl—which extraordinary vocal effect is only voluntary.

Mr. WOODGER: I beg your pardon. I never said that.

Professor HILL: You did indeed. I have it here in the shorthand writer's report.

The CHAIRMAN: There is nothing remarkable in making the dog bark.

Professor HILL: Not in a bark pure and simple, but it is a well-known fact that the peculiar croupy mixture of bark and howl in Rabies is only emitted in the silence of night or when the animal is alone, and I am not aware of it having been produced by human invitation or aggravation.

Lastly, Mr. Woodger thinks we might be quite safe in putting the rabid dogs of London down by the thousand. It is to be regretted he did not give us a sound reason for such a sweeping statement, which is in direct contradiction to the statistics furnished, and as against it Mr. Alfred Broad naively observes in last weeks *Record*, "The reason why we do not more often see a rabid dog is because there are so few to muzzle."

Mr. Hurndall asks us for information on the view of spontaneity. I have nothing to add to what has been stated in reply to Mr. Edgar. I am not aware I said there had been no alteration in the muzzling order. On the contrary, it has been renewed and extended. In my opinion it would be an absolute impossibility to enforce a universal muzzling order—still more so a constant one. Every man's house is his castle, and kennels are private property—therefore it is not likely that individuals would submit to police trespass at any hour of the day or night. In the event of the latter, in some houses and kennels I wot of many members of the blue uniform would

speedily have to substitute calves of wood for flesh, and stump their beats in future.

Professor Pritchard made some pertinent and valuable remarks, albeit I had not lost sight of the fact that Rabies may be spread by animals other than the dog, as mentioned in my evidence before the House of Lords Committee. If there had been one opinion required more than another to clench the objection to muzzling as an efficient measure for the extirpation of Rabies, it has been that expressed in the utterances of my friend, Professor Pritchard, "That we must not only muzzle all the dogs, but all the foxes and all the cats," and, I may add, in the countries of their habitation, also all the wolves. And with cats it would also be necessary to encase the feet, for claws infected with rabid saliva are as dangerous as teeth. Facts are better than fancies, and Professor Pritchard's statement that he had little doubt that he could prove that in at least two outbreaks the Rabies in packs of fox hounds was traceable to some of the animals being bitten by rabid foxes, is one which at once strikes a deadly blow to muzzling.

Concerning the two exceptional cases of prolonged incubation alluded to by Professor Pritchard, I can only say that in my experience I have never met with such an instance.

Mr. Butters, who was practising in the firm of which I was a partner during the Albrighton kennel outbreak, assisted in furnishing Dr. Fleming with particulars connected with that outbreak when engaged on the subject of "Rabies and Hydrophobia," and he bears me out in my statement that in no single case, either in the furious or the dumb form, did the incubative period extend beyond the fifth week, and cases I have since seen have been within this period. Still, it is possible the incubative period may be longer and vary, to use Dr. Fleming's words, "according to the predisposition of the creature inoculated; in other words, according as the organic soil in which the mortiferous seed is sown, is more or less prepared for its evolution."

Mr. Raymond has called attention to the frequent and disastrous outbreaks of Rabies in the scavenging dogs of India. Now, I wish it to be distinctly understood, not only in this room, but by the outside public, that feeding on refuse, filthy surroundings, starvation, and ill-usage hold no place whatever in my mind in the production of canine Rabies. In Boulogne, where diseased and mongrel dogs of every type roam the town at large and live by scavenging, very few cases of Rabies have been seen, notwithstanding Pasteur receives a plentiful harvest of bitten people from there.

Mr. Slocock, I was glad to hear, considered those districts not under the order might have reasonable claim to exemption. I fully agree with him that temperature has nothing whatever to do with the production of Rabies—more especially heat—to wit, Australia is free.

Professor Walley, who has joined the discussion through the medium of the press, takes exception to my statement that the muzzle has ruined and killed dogs. In reply, I can only say that abundant evidence of the pernicious effects of muzzling on canine temper has been furnished me, and I have had ocular demonstration of its truth and known death produced by it, as alluded to in my reply to Mr. Samson. That any individual of experience in canine matters should dispute the injurious effects of muzzling passes my comprehension. There are dogs and dogs, as there are men and men. There are canine idiosyncrasies as there are human idiosyncrasies. What one dog will submit to another will resent, and what might be only a source of discomfort soon overcome to one dog might be fatal to another. There is much to be learnt from the study of canine character, and I am of opinion that a great deal of the success in canine practice depends upon the consideration the practitioner gives to this matter. The doctrine of spontaneity is not defunct; my own views on the subject have already been

expressed. Professor Walley has scarcely put my quotation correctly concerning Rabies in Scotland. I only dealt with the disease in Scotland up to 1874. Mr. Chaplin must be responsible for his own statement, and I am the more glad to have Professor Walley's history of the malady since 1880, as it furnishes another illustration of how necessary it is that even a minister of agriculture should be careful to be provided with reliable information before he makes a public statement.

Professor Walley admits he only saw *one* case in nine years in Scotland, viz., between 1871 and 1880. His remarks on Professor Horsely's allusion in the *Lancet* to the diagnosis of the paralytic form of Rabies will, I doubt not, be echoed by most, if not all veterinarians.

Mr. Alfred Broad observes, "But I see Professor Hill went so far as to say 'that nobody had ever seen a mad dog with a muzzle on,'" and remarks, "It is an argument usually advanced by those who have had little experience of the malady." I take this opportunity of thanking Mr. Broad for his insinuation and gratuitous opinion of my experience. There are those in this room who know I have not only made the subject a keen study for nearly a quarter of a century, but that I have had far more than a little experience of the malady. While it will be seen that Mr. Broad, though mentioning one case of a muzzled rabid dog, gives it as his opinion that "the reason why we do not more often see a muzzled rabid dog is because there are more so few to muzzle," and this in the face of Mr. Woodger's statement that in London alone they might safely be put down by the thousand.

With regard to the confinement of a rabid dog's mouth, Mr. Broad asserts "that a muzzle could be put on, and what is more, kept on," but he adduces no evidence in support of the latter opinion.

Mr. Raymond, in re-opening the discussion this evening said that the disease being communicated by a bite or by licking, he considered some hindrance should be placed upon the teeth or tongue, and he asked me also to prove that dogs have been ruined—well, that I have done.

Mr. RAYMOND: But you said thousands had been ruined.

Professor HILL: I could get you proof of a great number, but I think if I could prove a dozen that would be plenty—that I can easily do. Mr. Raymond also asked me to give an illustration of a case in which anæsthesia was impracticable or could not safely be employed. I am obliged to confess that I was astonished to hear any member of the veterinary profession ask such a question. I thought it was an undisputed fact that in almost every form of heart disease the administration of an anæsthetic was dangerous.

The CHAIRMAN: The report of the Hyderabad Commission utterly denies that.

Professor WOODROFFE HILL: How about the monkeys?

The CHAIRMAN: It has been utterly denied. In fact, an animal is much less likely to die under those circumstances when anæsthesia is resorted to than when it is not.

Professor HILL: I must hold to my opinion. I have known cases of horses suffering from pericardial disease and valvular affections of the heart, to die under an operation when an anæsthetic has been administered, and Mr. Butters will recollect a spaniel that so died.

Mr. RAYMOND: But then there has been some excitement.

The CHAIRMAN: Exactly.

Professor Hill: Not necessarily.

The CHAIRMAN: This is rather outside the question under discussion, perhaps you will resume.

Professor HILL: Then I was asked a question about the system of administering hot steam baths; well, I did not originate that theory, neither did Dr. Dolan; Dr. Buisson is responsible for it. The quotations of statistics

which I gave from 43 in '75 to zero in 1885 were Mr. Colam's figures, and they are abundantly confirmed by the book which Mr. Raymond has since handed to me.

Then Mr. Broad made some observations, but as he has since left the room I do not think it is worth while to criticise his remarks, which were chiefly directed to what he was pleased to term the vagueness of some of my statements.

I am glad to note that Mr. Moore agrees with me in my opinion as to the non-efficacy of the muzzle.

Mr. Harrison thinks the muzzle useless except for giving the policeman power to seize unmuzzled dogs. I really think that is the only rag of argument which can be adduced in its favour—it has a certain amount of weight in regard to the stray curs.

Mr. Butters mentioned a probable cause of the spontaneous origin of the disease and agreed with me in my views as to its incubation. Your worthy president, Mr. Hunting, on the subject of spontaneity has paid me the compliment of not desiring to raise any very strong objections to my theory out of respect for me. Of course, I am very much obliged to him for that, but I must draw attention to the fact that I am by no means the only man who believes in the theory of spontaneity. I think Mr. Hunting will not deny that Professor Williams, of Edinburgh, holds a high position in our profession, besides being a man of undoubted ability. On one occasion, at a veterinary medical meeting, he expressed his belief in the theory, and said it would take a lot of argument to shake him out of it.

The CHAIRMAN: I quite agree, I think it would.

Professor HILL: At any rate, you will agree that he is a sound, deep-thinking man.

The CHAIRMAN: No.

Professor HILL: I understand you do not think so.

The CHAIRMAN: Emphatically no.

Professor HILL: I am glad to see that Mr. Hunting doubts the objections which have been made about the period lasting for a year, and asks for more proof as to the mode in which the dogs alluded to were kept. I agree with what has been suggested in reference to publishing the symptoms of the disease on the back of the licence. I further think that the difference between dogs who are in reality stray and homeless curs, and those who are merely stray in a temporary sense from having got lost, should be distinguished. Then it is suggested that if we had a registered collar that the outside regulations should be made more stringent; to that I think no one would take exception. Then it has been said that statistics prove nothing, and although I cannot quite agree with the assertion, I think if it was a Government matter the figures would be more reliable. I also fully acquiesce in the suggestion which has been made by the Chairman, that any locality where a rabid dog has been should be immediately declared an infected area. In my opinion there should be a fixed area, and a fixed period of quarantine, of say five weeks. I should like to mention that the year before last there was a rabid dog in Hastings, the only case that has been known there, and that dog came from Brighton. He bit fifteen dogs before he was killed. Every one of those fifteen dogs I destroyed myself in the morning. In consultation with the Town Clerk, Mayor and Chief Constable, who thought it necessary to order muzzling, I fixed the period of time at six weeks, but that was reduced to five weeks, believing if no other case occurred within that time the town would be safe. We have had no other outbreak. Now the quantity of saliva that a rabid dog drops about is one reason why I believe with Mr. Hunting that declaring a spot infected where such an animal has been is a very sensible measure indeed. I also fully agree with the Chairman on the

absurdity of attempting to stamp out Rabies in this country and yet continuing to allow the importation of foreign dogs. Until this is guarded against scares will continue.

Mr. Oatway believes the incubative period may extend to two years. Of course a statement like that is better proved. In regard to what was said about the rabid dogs at Pinner, where the poor gardener had the fearlessness to hang ten rabid dogs in an orchard, that statement rather startled me, and I was astonished to hear that he was yet alive. The gentleman who told us may have been misinformed.

Mr. OATWAY: I can give you the name and address of the gentleman for whom he worked. He is living with Mr. James Garrard.

Professor HILL: I am afraid that in coming here as a stranger you may think I have rather intruded myself upon you, but I can assure you that I am extremely obliged to you for having listened to me, and for having favoured me with your criticisms. I may tell you one thing, and that is—if you think I came here to try and instruct you, you are very much mistaken. I came here to learn, and I have learned something.

The PRESIDENT in proposing a vote of thanks to the essayist observed that whatever views they might hold on the subject Professor HILL had introduced, they must nevertheless admire a man who had the pluck and backbone to defend his opinion in the way Professor Hill had done. The paper had created one of the best discussions the Central Veterinary Medical Association had ever had.

Mr. RAYMOND, in seconding, remarked Professor Hill had kept close to his hard line of argument all through.

NORTH OF ENGLAND VETERINARY ASSOCIATION.

THE usual Quarterly Meeting of this Association was held at the County Hotel, Newcastle, on May 30th, when the following members were present:—The President (occupying the chair), Mr. J. W. J. Moore; Messrs. C. Stephenson, D. Dudgeon, J. Gofton, J. B. Nisbet, G. Elphick, T. Greaves, Professor Williams, Messrs. W. McGregor, J. Mitchell, H. Hunter, and the Secretary, W. Ashton Hancock. Visitors—Messrs. Anders Bjorkman, Sweden; J. Aitkin, D. Macgregor, and Mr. Askew.

Mr. F. Finnay of Newcastle, was unanimously elected a member of the Association.

A series of resolutions forwarded by the Central Veterinary Medical Society on the subject of Rabies was considered.

They were:—

1. "That this meeting, whilst recognising the possibility of animals other than the dog becoming the media of spreading Rabies, is of opinion that in a large majority of cases, if not the whole, the development of this malady is due to the dog."

2. "That from abundant evidence gathered in our profession, this meeting finds that effective muzzling is the most reliable method of stamping out the disease."

3. "It is advisable that all imported dogs be subjected to a quarantine of six months."

4. "That partial or local muzzling of dogs for the prevention or eradication of Rabies is inadequate."

Professor WILLIAMS thought that local muzzling of dogs was not sufficient, and that universal muzzling was best.

Mr. GOFTON thought it would be a good plan to forward to the Board of Agriculture copies of the resolutions.

Mr. ELPHICK said that while he did not advocate the muzzling of packs of

hounds, he certainly thought that the consideration of owners of dogs on the subject should not be thought of, but that universal muzzling should be enforced, as it was the only way of stopping the disease.

Mr. T. GREAVES advocated the plan of universal muzzling, and not local, as the best method of stamping out the disease; and thought it best to adopt the resolutions as they were.

Mr. STEPHENSON did not consider that it was right to say that local muzzling had not been sufficient to cope with the malady, and suggested the resolutions should be put to the meeting separately. This was subsequently done, the first, second, and third resolutions being agreed to unanimously, and the fourth was adopted by a small majority.

The Secretary was instructed to communicate to the Secretary of the Central Veterinary Medical Association the result of the discussion at that meeting of their proposals.

The consideration of the suggested alteration of the dates of the meetings of the Association was then brought forward.

The PRESIDENT said he was against altering the Society's dates, as he considered more deference should have been paid to them, they being an older society than the Royal Counties.

Mr. ELPHICK agreed with the President.

Mr. D. DUDGEON did not consider it right that we should stand on our dignity too much on this question, as after all it would make little difference to the meetings to hold them on the third Friday of February, May, August, and November, instead of the last Friday of those months as at present; he would therefore give the usual notice to the Secretary to alter the rule of the Society on this question, so as to bring it forward at the next meeting.

Mr. T. GREAVES said that at the conference of Presidents and Secretaries of the various Veterinary Associations recently held in London, every endeavour was made to meet the wishes of every society, and he felt sure if the matter was left to the Secretary an amicable arrangement would be effected.

PRESIDENTIAL ADDRESS.

The adjourned discussion on the President's inaugural address, delivered at the last meeting, then took place.

Mr. CLEMENT STEPHENSON said: I wish, gentlemen, to draw your attention to that portion of the President's address which refers to Tuberculosis, particularly that part in which he says, "I maintain that steps should be taken to ensure uniformity of action, and that it should be laid down authoritatively, that if an animal be affected with Tuberculosis, no part of its carcase should be consumed."

Whilst freely admitting the prevalence of Tuberculosis, and the serious character which the disease sometimes attains, I venture to say that the sentence I have quoted is of much too sweeping a nature, that it is not warranted by the facts that are known to us, and, further, that if it ever should become the law, it would lead to a great and unnecessary loss of food to the nation.

It is impossible to enter fully into a question of this kind this afternoon, I purpose, therefore, to simply notice a few of its more prominent aspects.

Tuberculosis in animals and Consumption in human beings may be taken as one and the same disease. Many observers say that Tuberculosis is on the increase, but this is contrary to my experience—but however this may be, we have it on good authority that Consumption has decreased to the extent of 28 per cent. during the last quarter of a century.

I admit that Tuberculosis can be transmitted by inoculation from animals to animals and from man to animals, and that the milk of a cow suffering

from tubercular mammitis is extremely dangerous and should not be consumed; but before going any further let us look at the facts of the case. Cattle, sheep, pigs, and poultry are all liable to suffer from Tuberculosis; large numbers of carcasses of cattle have been condemned, but we seldom or never hear of carcasses of sheep and pigs being condemned. Are they all not equally dangerous? Is it that the marks of Tuberculosis are more easily recognised in the carcasses of cattle than in those of sheep and pigs? or is it that the latter are not examined?

Now, taking cattle as our standard, what is the condition of those in which we find or suspect the disease to exist? I think we may divide them into three classes: 1st, Those in which we can detect the disease; 2nd, Those in which we suspect the disease; and 3rd, Those which show no sign of the disease, and in which it is only found after death.

In the first class we find the "wasters," and I agree with our President that their carcasses are totally unfit for food; but all the same they are consumed in one form or another, and can anyone point to disease as a result. In the second class we find animals that look like "wasters," worn out, emaciated old cows, coughing and wheezing. Over and over again I have seen *post-mortems* on such animals, and found them perfectly free from Tuberculosis, but suffering from Emphysema, Chronic Bronchitis, or Pneumonia. In the third class we may find the primest beef cattle that are shown in our markets—animals in which no one could detect disease, or be suspicious of its existence during life.

If it was proved that the consumption of the flesh of tubercular animals had caused similar disease or any other disease in human beings, I would be one of the first to go in for wholesale destruction of all tubercular carcasses. I would remind you that the carcase may be extensively diseased, yet the muscles—the meat we eat—be perfectly free from any trace of the disease; and that there is all the difference in the world between the experiment of inoculating calves, rabbits, mice, etc., with the sputa of consumptive patients, or the cultivated bacilli, or introducing pieces of raw meat into the peritoneal cavity, and that of eating properly cooked meat.

Instead of wholesale destruction of all carcasses found affected with Tuberculosis, it would, in my opinion, be ample protection to the public if we had power to seize and destroy "wasters" and dairy cows in which the udder was found to be affected.

As to carcasses, I think those in which the disease is found generalized should be destroyed, but that those in which it is found localised in one or other of the organs—the carcase being in all other respects good—should be passed.

In my opinion we have every reason to believe that Tuberculosis is not so prevalent as in past years, and as one reason for this conclusion I would say that in former years the Jews would perhaps kill five beasts before a perfectly sound one was found, whereas now they would kill one—thus showing a great decrease.

Mr. DUDGEON said the question of Tuberculosis was a very difficult one, especially with reference to its bearing on the meat supply, and although he did not consider it had been proved that the disease could be communicated to human beings through eating the flesh of animals that had suffered from Tuberculosis, he thought the Government should go thoroughly into the subject.

Mr. ELPHICK would like to say that it was time more rigorous measures were taken in connection with Tuberculosis. He knew of a great number of cattle coming into Newcastle at the present time from some parts of Scotland, suffering from the disease, and he had no doubt this traffic was carried on solely as the result of the recent investigations into the subject at Glasgow.

He had known one or two cases in which the cows had actually died after arriving in Newcastle.

Professor WILLIAMS said that at the present time any carcase was condemned at Leeds since the inquiry took place at Glasgow; and he thought the best plan would be to ask Government to appoint a committee to investigate the subject thoroughly.

The PRESIDENT in his reply said that the question of fitness or unfitness of meat for food was simply a matter of opinion. The difficulty of tracing any effect from its consumption was due, he thought, to the wide area over which a carcase was spread. He may have eaten meat from a tuberculosed beast, it would be stupid to say he had not, but he would not eat one bite if he knew it. If he were a meat inspector he would not pass anything that he would not like to eat himself. He admitted that it was a great hardship to a butcher having a carcase seized after a proper examination had been made of the animal during life, but as matters now stood it was unavoidable. He thought the best plan was to carry out the suggestions he had made in the last paragraph of his address.

Professor WILLIAMS proposed, and Mr. C. STEPHENSON seconded, the following resolution on the subject, which was carried unanimously.

"That this meeting is of opinion that the question of Tuberculosis is ripe for investigation, and that Government should appoint a Committee or Commission of Research to investigate and report upon the whole matter."

Mr. GOFTON proposed, and Mr. NESBIT seconded, that a copy of the resolution should be forwarded to Mr. Chaplin.

Mr. T. GREAVES, of Manchester, then gave his paper on

SOME PHASES OF THE EXISTING PREVALENT DISEASE.

When honoured by a request from your secretary to write a paper for your Society, compliance with such a request was regarded by me as a professional duty.

It is not my intention to enter largely into the history or nature of Influenza, but since if is so prevalent in one of its forms at the present time, I thought our meeting would be well occupied by refreshing our minds with the various symptoms and the most successful methods of treatment our experience has developed. It is a subject full of interest, and every member has become thoroughly familiar with it, and by each member relating his experience and the mode of treatment which he has found successful, we shall all receive valuable aid to knowledge, and each individual member may be benefited and become more useful in his daily life.

Its nature in the early stage.

The first systems observable are a specific, simple, harmless, feverish state of the system generally, like unto the effects following a simple chill. The animal is found to be dull; he has become all at once languid, in some cases he is all of a piece; there is an evident disinclination to move; his appetite fails; there is a febrile reaction, an accelerated pulse, an increase of temperature; the legs and sheaths become swollen, and eyes closed in some cases. If the horse is stopped from work on the very first sign of illness, placed in an open comfortable loose box and his nursing well attended to, he will, as a rule, soon recover. Nineteen out of twenty cases will not be attended with much danger; although his condition may have been pulled down, his constitution has not suffered; nature is ever a wise economist if only you give her a fair chance. But when a close and careful supervision is not observed and the horse is worked on for one, or two, or three days after he has contracted the disease, and he is kept in the same stall, in that case it is attended with danger. The practitioner may find it difficult, if not impossible, to

cause the disease to subside. If the horse is an old one, with probably some chronic disease on him, he will require very careful treatment, and even then he may succumb; or if the treatment is of too heroic a nature, or in other words he is over-doctored, it may aggravate the disease, exhaust nature, and he may sink under it. Of course the epidemic may come in a mild type or one of exceptional severity,

The probable cause of this epidemic.

The precise cause is not clearly evident, but I think it is safe to believe there is a peculiar condition of the atmosphere—an atmospheric wave containing deleterious atoms, or germs of some kind or other, a cloud of bacteria. This may be spread over, or settle on a limited area, or it may be over an extensive district (the relation of lower organisms to disease has moreover a growing importance) and which in a few weeks or months will expend itself, and entirely subside. This infection may be carried by currents of air in any direction, may invade any place, any stable, be it clean, pure, well-ventilated, or all the conditions the very reverse; and in this stable the atmosphere is surcharged with a morbific miasma, or putrid matter floating in the air, but which may be indistinguishable, not discernible by the nicest chemical test—its presence is only inferred by its effects upon animal life—the depraved state of the blood produced. Whether it be an excess or deficiency of oxygen in the atmosphere, an excess or deficiency of some of the constituents in the air, we know not, but we are satisfied that animals living any length of time constantly in ill-ventilated stables, where the air is vitiated by emanations from foul drains, are far more likely to have the epidemic severely, and will be much more difficult to treat.

At these periods (and here we leave the confines of the known and enter on the hypothetical) when Influenza is prevalent, the air of the district contains some deleterious ingredients. The virus is stirred up somewhere, floated and diffused in the air, carried by current to considerable distances, retaining its power of destruction all the time, the horses most susceptible being first attacked. Still, we can as yet no more understand these floating germs then we can how the perfume of a flower is diffused through the air, or how a grain of musk should give off its peculiar odour for the space of twenty years and yet not become perceptibly diminished in bulk; we are equally unable to explain why out of twenty persons breathing a loathsome air one only will breath a fatal dose, and nineteen will escape the malarious poison. We have all experienced the stench from putrid ditches just before rain, when the air becomes charged with moisture, and we know how sensible the perfume of flowers becomes during the fall of the evening dew—the odour of the bean blossom may be perceived many fields away if you happen to be in a line with the wind from the beans—these instances are incontrovertible evidence of the particles being supported and floated in the air, and carried by currents of wind; it is by precisely the same means that infectious diseases are carried by currents of air. Some say the germs are carried in the interstices between atoms of the air. Now if you allow a strong ray of light to pass through a small hole into a dark chamber containing ordinary air, it is quite visible all the way across the chamber; this is owing to the refrangibility of the air containing solid particles, or the vibration of atoms which become luminous as the rays of light strike them; but if the air in this chamber is rendered perfectly pure by the mechanical removal of these solid particles and germs, the ray of light will be utterly invisible. This experiment shows that pure air is invisible by its transparency. Zymotic diseases are ordinarily propagated in this manner: an individual affected with some contagious disease throws off particles from the region specifically affected, or from many parts of the body, and these particles on coming in contact

with suitable surfaces in other persons may incite similar local or general diseases in them. This is the way disease is usually spread in communities of men and animals, though such a result does not invariably follow. The particles may be organized beings, and their power of propagating disease is due to their organic development. The material in question grows and multiplies and produces its kind, as all living things do, and as nothing that does not live has been proved to be capable of doing.

Various phases of Influenza.

Influenza assumes several distinct aspects, differing in many essential particulars from each other: thus at one period we have a sudden run of cases in which the leading characteristic is extreme nervous debility and prostration, following immediately on the attack. This form of malady may continue for six weeks or six months, and then subside without any apparent reason, as though the cause had expended itself. We may be free for years from any disease partaking of an epizootic or enzootic character, then all at once we have a number of cases with symptons very different from the former, but still coming under the denomination of Influenza: these cases may have a great tendency to œdema in the eyelids, closed eyes, and, in extreme cases, the anterior chamber of the eye containing lymph; the extremities much swollen, with great tenderness in them—this type of disease may continue six weeks or six months, subsiding we know not how or why. Again, we may have a long period of absence of disease of epizootic or enzootic kind, when all at once we have the catarrhal type. Numbers of cases with sore throat and profuse discharge from the nostrils—some have abscesses under the throat; the worst of these kind of cases will have a straw-coloured or yellow discharge from the nostrils, indicating Broncho-pneumonia, or epidemic Catarrh. We may have a run of this for several weeks or months, and, like its predecessors, it will subside without any definite reason that we can see. Again, we may be comparatively free for a time, when all at once there will occur one, then another, and then a run of cases in which the organs of respiration are chiefly affected by a low inflammation, consisting of what is sometimes called chest Influenza. This last is by far the most serious type of epizootic, and requires the deepest and most attentive consideration. These cases progress most insidiously; there would appear to be a decrease in the fibrinous constituents of the blood; at length the epidemic subsides, like its predecessors, we know not how or why; but as in the previous visitation it would appear that the cause, whatever it may have been, had become less and less virulent, and had in the end entirely expended itself—in fact, every epizootic and every epidemic have their entrances and their exits in a similar way. The fact of a disease existing in particular localities is not certain proof of its being either infectious or contagious: these terms seem not to be rightly understood by most persons. The spread of disease is often a result of some local or general cause, wholly apart and independent of infection; we see it breaking out where contact is impossible, and see a wide area prostrated in a few hours or a day. If the poison emanated from one animal in a healthy atmosphere, it would be speedily diffused and rendered inert.

Our age is marked by a spirit of enquiry, directness of aim, and the skilled power to do the work required of us with completeness and economy; nothing that has been done is lost, invention awakes invention, discovery leads to discovery, each advance is a starting point for the future labourer, and thus we find better work, more simple and more to the purpose, yet much more remains to be done. The ship, the bridge, the rail, the telegraph and the gun of the present day, as compared with the past are types, and mark the skill, precision, and advancing energy of our age. Medicine, too, partakes of this movement that is going on all around us; the knowledge of disease is becom-

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ing more accurate and more extensive. Each year gives us better ideas of what medicines can do, and what they cannot do. If the spirit of scepticism has shaken the belief of a few in the virtue of drugs or medical means at our command, that spirit has aroused enquiry—converted belief which is shifting into knowledge which is secure, and thus our knowledge of disease ripens, our aims in its treatment become more precise and correct, and all men ask themselves at each step they take, why they do this or that; reason takes the place of routine, and rational medicine becomes the common property of the profession. But there are still many of us who cling to doctrines that have long since been exploded, and follow customs that are unsuited to existing circumstances; we are too apt to ascribe an exaggerated and mystical significance to medicine. Whatever may be a particular line of treatment for disease, the influence of that treatment on the disease itself is less than the practitioner is apt to think; the great majority of diseases tend to get well of themselves, if only the delicate operations of nature are allowed full play: treatment cannot change their nature, cannot expel them at once, cannot quench, materially shorten, nor prolong their existence: in fact, I am inclined to the opinion that no medicine of itself ever did cure a disease, any more than splints and bandages can set broken bones. They may stimulate nature to quicker and more effective action, or the reverse. When we contemplate the abominable adulterations and vile combinations of drugs and call them medicines, we find they often destroy health and produce disease. Can we conceive a greater exaggeration than the homœopathist's millionth part of a grain curing a malignant disease? We strain all our faculties to the utmost, and call art and science to our aid in acquiring knowledge, and we thus use it when we have got it; we plough the ocean, and girdle the earth with our ships, and sink a thousand human lives annually in the deep sea graves, and bring to our help drugs from other climes to cure disease, and we use them thus when we have got them! A thoughtful practitioner with nearly a complete knowledge of the natural changes through which the disease passes from the beginning to its end, knows with tolerable precision how far he can assist nature in her efforts to overcome it. Depend upon it our intelligent employers believe it is our duty to know and to apply general principles, as well as to know and apply medicines. Every veterinary writer of eminence lays it down as a rule that it is as much a practitioner's bounden duty to bring his knowledge to bear is preventing the entrance or development of malignant diseases as in arresting and curing them. Epidemic diseases have afforded a fruitful subject for study and speculation in all periods of history; so sudden is their invasion, so widespread is their and so little amenable is their progress to the laws governing other affections, that they have excited the interest and engaged the attention of the wisest and ablest students and philosophers. We will now consider the subject of

The treatment of the prevailing epidemic.

The epidemic which has prevailed in Manchester during the last few weeks or months, although the cases have been very numerous, yet the fatality has been, proportionately, very small. Let us for a moment consider a number of horses in a large firm, each in the enjoyment of perfect health, all their surroundings everything that could be desired, when all at once a case is reported to be ailing, dull, and off his eating; then another, and another, out of different stables, and within an hour or two; and within twenty-four hours, twenty or more cases, all suffering alike. *This is exactly as it is.* Now if the horses are obliged to be turned out to work, or return to the same stall day after day, and no extra care is taken of them, the febrile condition becomes more and more intense, probably the lung tissue becomes more or less tumefied, the blood shows a strong abnormal tendency to coagulation and that

exceedingly fibrinous condition, and the probability is we shall find our treatment will not now suffice to arrest the diseased action, which has got a good foothold. With a pulse 72, 84 or 96, often intermittent and irregular, temperature 105°, the Pneumonia symptoms creeping on insidiously as it were, the respiration becoming daily a little more and more accelerated, many of these cases in which diseases has so advanced will defy every method of treatment we can adopt.

But what I want to show is that most of this suffering, danger and death, might have been in nearly every case avoided if proper care and attention had been taken at *the very beginning*. What I mean by proper care and attention is this—at *the first feed the horse refuses, the first symptoms the horse shows of being dull* and disinclined to move, he must be stopped from work. I lay all the emphasis I can on the word REST. *Take the horse out of his stall*, remove him into a nice, sweet, comfortable, airy loose box, clothe him, and place a bucket of bran tea before him; if you do nothing more than this the probability is that you have put him on the high road for recovery. You will find in twenty-four hours all the febrile symptoms greatly relieved, pulse reduced 10 or 20 per minute, and the temperature also considerably subsided. We find some horses much more susceptible to take the epidemic than others; some will have it more severely than others; in some cases the disease will pass off with little or no medicine, others will hang in hand for several days, and seem to remain stationary after the first improvement has been made. In such cases, if the pulse is 60 or over, I give carbonate ammonia two drachms once or twice a day; if the bowels are acted on by it I discontinue, and give extract of belladona one drachm, and camphor one drachm in ball daily, or twice a day, and fever drink. If his breathing is a little quicker than it should be, I apply a stimulant to the sides, and use my rugs wrung out of half-scalding water over the thorax, changing it every four hours, and attend well to nursing. I am partial to giving whiskey and milk, *keeping his ears warm*, and giving him anything and everything nice to eat. I find sulph. magnesia, sulph. soda, nitrate potass, nitrous ether, salicylate of soda, antipyrin, and also quinine, are severally advocated; but I must say good intelligent nursing is much more important than medical treatment. In large establishments where there are a number of horses ill at the same time, I have had them turned loose in a large shed or arch (on several occasions twenty-seven to thirty horses at a time) with great advantage, removing the hind shoes for safety. I fumigate every stall with carbolic acid fumes to change the character of the air in the stable, get fires in each stall for an hour a day; this draws into it, and burns up the putrescent or impregnated atmosphere in the stable.

The appearances shown on *post-mortem* examinations are often the heart full of black blood, lining membrane inflamed, parenchyma of lungs in gray hepatization, and bronchial tubes black.

In conclusion, I wish to thank you for the kind attention you have given me. This is not the first nor the second time I have had the honour of reading a paper before you; I have always felt it a great pleasure and privilege to come amongst you, and when absent from your meetings have been delighted to hear of your success. Let us hope the efforts you are making will redound not only to your own credit, but also to the honour and greatness of our profession; for to live for ourselves alone, or only for our time, is a narrow view of our position; our day of opportunity will soon be past.

"So should we live that every hour
May die as dies the natural flower,
A self-reviving thing of power;
That every thought, and every deed,
May hold within itself the seed
Of future good and future meed."

Mr. McGREGOR, Bedlington, said he felt very much indebted to Mr. Greaves for coming to the meeting and giving such an interesting paper. He had met with many troublesome cases, and in some instances they had a second and even a third attack. He did not agree with Mr. Greaves in thinking it was carried by the atmosphere, for he had met with it in pits, and in such cases he came to the conclusion that it arose from the horses or ponies going down into the pit too soon after coming from the dealer's hands. Horses, in his opinion, suffered far more than ponies. As to the treatment, he did not advocate too much medicine, but he agreed that great attention should be paid to the nursing, etc., in lung complications he stimulated the sides. He had found milk a good thing, and would mention one striking circumstance invariably accompanying the recent Influenza, and that is the rapidity with which the flesh disappeared—it seemed to slide off them, so to speak.

Mr. GREAVES said he also had several cases return to the infirmary after a few days, and in one case the brain became affected. He had had over fourteen deaths in one place, and had had as many as 130 horses laid off work in one establishment.

Professor WILLIAMS considered that Mr. Greaves had dealt in an able manner with a very practical subject. In his opinion, the disease was partly due to atmospheric causes, for it has appeared in so many places simultaneously; at the same time an animal can convey the disease after partial recovery. As far as his own experience was concerned, there had not been much of the disease in Scotland, but he was very particular in urging horse-owners to immediately cease working a horse as soon as it was noticed off its food; for he thought, owing to that neglect, many horses were lost. He was no advocate of stimulating the sides as Mr. Greaves said had been of benefit in his cases, and he did not give belladona or digitalis, for they interfered too much with the appetite.

Mr. GREAVES thought that, in many cases, stimulating the sides was attended with good results, and mentioned Mr. Broad's treatment of Laminitis as an illustration of what he intended to convey; but he never went in for the old-fashioned methods of blistering.

Mr. H. HUNTER said that Mr. Greaves could not have read a more appropriate paper. His own experience went to show that many cases did not yield to treatment, no matter what mode of relief was adopted; and he certainly was of opinion that a fly blister to the side was of benefit in cases of lung complications; he also gave belladonna in small doses. The termination in some cases was Gangrene of lungs, in others the bowels have become seriously involved.

Mr. G. ELPHICK had had many maglignant cases, and his worst were those that never seemed to yield to any treatment from the first, in fact they would not eat anything. He also had known of cases occurring in pits in which no new horses had been taken down for months, and in his opinion it might possibly arise from a species of septic poisoning. He thanked Mr. Greaves for his able paper, and begged to propose a vote of thanks to him. This was seconded by Mr. DUDGEON and carried unanimously.

In reply to the question of Mr. Gofton, Mr. GREAVES said that some three or four members of the Yorkshire Association had felt themselves aggrieved because the Veterinary Defence Society had not taken up the defence of a case of one of their members from Halifax, in which this member has been summoned, conjointly with the owner of the horse and another, for cruelly torturing and illtreating a certain horse. Now the owner of the horse and another person not being members, or even veterinary surgeons, the society could not undertake their defence. It would have been illegal and unjust to undertake the defence. The society has 130 or 140 members;

somehow a mistake has got into the journals that we only number twenty or thirty members; that referred to the Council of the Society, who adjudicate on every case brought before them. At the next meeting of the society the reduction of the entrance and deposit fee will be considered. "The Snarry case," it would seem, has occasioned alarm.

W. ASHTON HANCOCK, *Hon. Sec.*

MIDLAND COUNTIES VETERINARY ASSOCIATION.

THE Quarterly Meeting of the members of this Association was held at the George Hotel, Northampton, on May 9th. The president of the Association, Mr. F. W. Wragg of London, occupied the chair, and there were present Professors Pritchard, London; Williams, Edinburgh; Messrs. T. J. Merrick, T. H. Merrick, Northampton; Bainbridge, Wellingborough; F. Blakeway, Treasurer, Kidderminster; J. Malcolm, Birmingham, Hon. Sec.; J. Blakeway, Birmingham; J. Burchnall, Loughborough; R. H. Cartwright, Wolverhampton; B. P. Freer, Uppingham; J. O. Hills, Leamington; J. Over, Rugby; H. D. Pritchard, Wolverhampton; J. H. Reynolds, Daventry; Russell, Grantham; F. A. Simpkins, Market Harborough; H. M. Stanley, Birmingham; R. C. Trigger, Newcastle, Stafford; J. Wartnaby, Burton-on-Trent; J. Wiggins, Market Harborough; F. Drage, A.V.D., and T. Wilson Barker, Market Harborough.

The Secretary read letters of apology from Professors Axe, Walley, Penberthy and McFadyean, Messrs. Hunting, Carless, Olver, Beddard, Taylor, Kitchen, Perrins, Gold, Smith, Barber, Butcher, Tailby, Verney, and Pinkett.

The Secretary read a letter from Mr. Scriven, Treasurer to the "Snarry fund." It was resolved and carried unanimously, that the Association take no action in the matter, but that the individual members might do as they thought best.

A letter was read from the Central Veterinary Society with regard to Rabies, which it was decided to discuss at next meeting.

The Hon. Secretary stated he had great pleasure in announcing that the nominee of the Associations for election to the Council of R.C.V.S., was successful having secured 515 votes.

Mr. TRIGGER thanked the members of the Association for the confidence they had reposed in him, and for the assistance they had rendered in returning him as a member of the Council of the Royal College of Veterinary Surgeons. It was especially pleasing to him, because he believed the members of the Midland Counties' Association had worked with great unanimity and solidarity, and that was evidenced by the state of the poll. He assured the meeting he felt the importance of the trust, and that he would do his best to consider the interests of the Association and the profession as far as he possibly could.

Mr. F. BLAKEWAY brought a question before the meeting with reference to the National Veterinary Benefit and Mutual Defence Society. When the Society was first formed he said he became a member of it and was so for many years, but when a great alteration was made in the entrance fees he felt it necessary to resign. The Midland Counties had voted £25 to the Society, which gave them the privilege of electing a life governor, and Wm. Carless, Sen., of Stafford, was elected. On the death of that gentleman the question was opened as to whether that £25 enabled the Midland Association to elect a life governor for ever or only for one life, and it was decided the election was for ever. Mr. Blakeway said he had the honour of then being elected a life governor, but when he resigned from the Society and withdrew his own subscription the Society ignored him altogether. He submitted he

was a life governor in addition to being a member, and would like that point settled.

Mr. TRIGGER moved that the Hon. Secretary write the Society, calling attention to the fact that their life governor had not received any notice of their meetings of late. Mr. Trigger said he was on the Council of the Society, and would endeavour to bring the matter to an issue at the next meeting. He certainly thought the Association had a right to Mr. Blakeway's services.

Mr. WIGGINS seconded the motion and it was carried.

Mr. T. H. MERRICK said at the November meeting of the Association he mentioned certain cases of Anthrax which had come under his notice just previously, and he thought it right to mention that two out of five animals which had not been inoculated had died, and that no death had occurred out of the ten or eleven other animals which had been inoculated.

New Members.

The following new members were elected:—Honorary Associate, Professor McFadyean; Messrs. A. L. Gibson, E. Franklin, A. E. Mettam, Birmingham; T. Butcher, Cleobury Mortimer, and F. G. Warmington, Sutton, Birmingham. Mr. R. Hill of Leek, and Mr. R. Wilson of Perry Barr, Birmingham, were also proposed for election as new members at the next meeting.

The President of the Society.

Upon the motion of the Chairman, seconded by Mr. Trigger, a vote of thanks was accorded to Mr. A. E. Beddard, of Wolverhampton, for the manner in which he had carried out his duties as President during the past year.

Next followed an address by Professor WILLIAMS, of Edinburgh, on

RHEUMATISM.

He divided his subject into two parts—false or spurious Rheumatism, and true Rheumatism. Taking first false Rheumatism, he alluded to the joint disease in calves, lambs, and foals, and said many persons believed and looked upon that as a rheumatic disease. He had, however, had the opportunity of seeing a great many of such cases, and was led to the conclusion it was not a rheumatic affection at all, although sometimes due to wet and east winds; there was a further cause of it, and he looked upon the disease as of a septic character, and especially in the case of foals, to the absorption of septic matters from the umbilical cord. It was thought by some to be due to pervious urachus, but in lambs and calves it seldom arose from that. He looked upon it as a true septic disease. It, however, simulated rheumatism very much, because it appeared in one joint to-day and another to-morrow. It was due to the absorption of septic matter, owing to the contents of the umbilical vessels decomposing. There was an absorption of the products of putrefaction into the economy, affecting the articulations and the fibrous tissues. It would be very erroneous to treat such a case as one of Rheumatism, as anything that would be depleting would be fatal to life. The disease was very often fatal, and if the cases were treated by a lowering treatment they would lose a much larger number of cases. Looking at it as a septic disease, an idea was suggested to him which is now being carried into practice, and that was to cut off the remains of the umbilical cord as close as possible to the abdomen, as there was always a discharge of a peculiar thickish coffee-coloured matter or decomposing blood which was left in the vessel after birth. After that the parts are fomented with hot water, and then injections used backwards and forwards with a weak solution of corrosive sublimate. The wound should be dressed

repeatedly, and he was pleased to tell them that treatment had saved a great many cases. The disease was much more fatal in the case of foals. To remove the source of septic poisoning, they would have to get rid of the decomposing contents of the umbilical vessels and treat the case antiseptically, and he hoped they would give that treatment a trial.

The Professor then alluded to a disease which was supposed by some to be acute Rheumatism in a mare—fever, violent pains not only in the joints, great restlessness, and very often laminitis. That occurred shortly after foaling in mares, and was due to the retention of the fœtal membranes, and was often fatal. It began by decomposition in the uterus, and the setting up of a high fever and inflammation of the uterus. The blood coagulated in the veins of the uterus, and there was generally blood-poisoning with great fever, elevation of temperature, an exceedingly rapid pulse, quickened breathing, and all the symptoms of most acute disease and of congestion of the lungs. The animals sometimes died in the course of a few hours with all the symptoms of pain of a most marked character. He found that was looked upon as Rheumatic Fever. It was not Rheumatic Fever, but Septic Fever, and was due to the absorption of septic matters. If they did not remove those fœtal membranes from the mare there was no chance of saving life. He would thoroughly cleanse the uterus, and afterwards disinfect it with a strong injection of a solution of corrosive sublimate. It must be washed out immediately, and not allowed to remain. They would then find the symptoms of acute fever to disappear, sometimes in a most rapid manner. They might add to this treatment, if the pain was great, opium, and so on.

Another marked form of Rheumatism was that of purpura. He had seen purpura appearing as a primary disease with a swelling of one joint to-day and another to-morrow, and in the course of two or three days the symptoms were perfectly well marked. To treat purpura as they would treat acute Rheumatism would be a fatal error. It was a disease characterised by septic conditions, and should be treated on antiseptic lines.

Then there was another form of disease very often mistaken for Rheumatism, namely, that of Osteoporosis. The symptoms were very often similar to those of Rheumatism, and were calculated to lead to error.

There was another condition which, however, he had never found among native horses, namely, a form of Bronchitis which prevailed among Belgian horses, and was induced by rough sea passages. At one time there were a great many horses imported into Leith, and they were often found to have Bronchitis of an acute character, with a most profuse discharge. Those cases apparently recovered, the discharge diminished, and the animals began to feed, and at the end of a fortnight they appeared in a fair way of recovery. All at once they would find one of those horses lame in one of its joints, and the next morning in another, and then all the symptoms of Rheumatism. Then Diarrhœa, then much better, then apparent recovery, and they might flatter themselves they had a splendid cure. By-and-by, however, the same thing occurred again. Diarrhœa set in, and there was a fœtidness of breath, and in about five weeks the animal died. The condition found was that the bronchial tubes were filled up with pus undergoing putrefaction, the products of which were absorbed. Looking at those cases they might think they were dealing with Rheumatism, but the effects in reality were due to the septic condition of the body.

In Mammitis they also had a condition of Rheumatism, especially in cattle, which was also due to the absorption of septic matter, which would be found to be the case if some of the fluid were withdrawn and placed under a microscope. Then there were the symptoms simulating Rheumatism brought about by the use of mercury, arsenic, phosphoric acid, and copper, especially in dogs. Osteoporosis had affected some of their best stock, and was an im-

portant subject to consider. Was it due to the animals being fed on bran, and thus creating a superabundance of phosphates: to the absence of lime; or was it due to the alkalinity of soil, as when fed near the sea? He had found change of diet effect great good in such cases, and gave instances of success in that manner.

Proceeding to speak of what he termed pure Rheumatism, Professor Williams said rheumatic fever, with its complications as in human beings, was in his experience a very rare disease in horses. Disease which was sometimes treated as acute Rheumatism was in reality Laminitis. A common form of Rheumatism, which might be termed chronic Rheumatism, and which first affected the tendons, particularly the flexors, and then spread rapidly, was brought about by low-lying and damp stables and bad drainage. He had experienced instances of that kind in Scotland, and had found change of locality beneficial, and cures effected while the stables were being altered. Chill and suppressed perspiration were the causes of Rheumatism. There were so many ideas as to the cause of Rheumatism that he did not know what to say about it. One would say it was uric acid, others that it was lactic acid, and others that it was associated with alkalinity, and bacteria. From his experience he was inclined to lean to the theory that it was sarcolactic acid which was the cause of the rheumatic changes, but it was, he admitted, a theory open to criticism, and he gave it only for what it was worth. The Professor here exhibited various specimens of bones affected with rheumatic Arthritis, and said he was of opinion that Navicular Disease was in many instances caused by that disease. He felt he was justified in coming to a conclusion of that nature.

Perhaps Professor Pritchard would not agree with him, but at the same time he was to be allowed the pleasure of his opinions. Continuing, Professor Williams said perhaps they would wish him to come to something practical and tell them how to cure Rheumatism; he was sorry he had little to say on that point. There was no doubt no good could be done so long as the horse was kept in damp stables. He had tried salicylic acid and saliclate of soda, blisters and physic, but had found very little good from either. He thought he had secured a better result from the use of iodide of potassium, and he had given the iodine by itself, as it remained longer in the body. He did not say it was a cure for Rheumatism, as he had seen cases recover without anything at all being given. The stables were changed and a better kind of diet used, and there was no other treatment at all. When there was a good deal of inflammation associated with the attacks, and some degree of pain, he found that bromide of potassium had a good effect. They might give an ounce for the first dose, but diminish it after that. In conclusion, Professor Williams said he had endeavoured to bring the subject before them more as one of comparison than anything else. In cases of rheumatic fever it would do no harm to bleed a horse, but if they were to bleed a mare presenting those symptoms of Rheumatism they would be certain to kill her.

Professor PRITCHARD said he had listened with considerable interest and pleasure to the address of Professor Williams, as he believed all present had. With reference to the death of foals being due to the absorption of septicæmic matter from the umbilical cord, that he said was a new thing to him, but still it seemed very feasible, and he could understand that the remedy Professor Williams advised was the one of all others calculated to prevent the dire effects following upon such absorption. He had been attributing the swellings in lambs and foals and other young to a different cause, a cause mainly due to the condition of the dam. That the condition of the dam did predispose to such a state of things he had not a doubt, even admitting Professor Williams's theory to be correct. It would often be found in the cases of foals, that the mares had been rapidly got into condition a month or six

weeks prior to the foaling time, and that was a very foolish practice, and one which caused the foals to be found suffering from a form of disease which was looked upon as Rheumatism, but which really proceeded from the condition of the uterus. He had been in the habit of removing the fœtal membranes, and then had found that the symptoms of Rheumatism passed off in the majority of cases. It had been his lot to see many cases of Rheumatism, as Professor Williams had said, following upon attacks of Influenza, which particularly affected the tendons. After trying all lines of treatment, he applied to the external surface of the joints a liniment composed of one part of tincture of iodine and eight parts of ordinary soap liniment, and had found that very successful. He agreed that damp stables and cold draughts excited Rheumatism. Professor Williams was quite wrong in thinking he should differ from him as to Navicular Disease being caused by Rheumatism, for he had long been of the opinion that there was a connection between them. In fact, he could remember cases which he had recorded where Navicular Disease had followed upon acute attacks of Rheumatism.

Captain RUSSELL and Mr. T. H. MERRICK entered into the discussion on the address, and the latter said he had at that time a most difficult case under treatment, and was really anxious to see whether he could learn anything from Professor Williams' address as to how the case should be dealt with.

Mr. TRIGGER called attention to the susceptibility of young colts to Rheumatism, and said it was difficult to define the reason. He could not say whether it was Laminitis or Septic Laminitis.

Mr. MALCOLM said he had had many cases following Influenza, but in his cases the Rheumatism always seemed to be in animals previously lamed.

Professor WILLIAMS said Rheumatism always attacked the weakest parts, and at the same time it attacked sound limbs.

Mr. WARTNABY and Mr. T. J. MERRICK also joined in the discussion.

Mr. BURCHNALL said he did not see from his experience how large joints could be put down to septic influences.

Mr. OLVER said he had known many cases in which the membranes had been retained for several days without any ill result. An antiseptic had been injected, and the animals otherwise well attended to. He had known Laminitis many times in which the membranes had not been retained at all.

The PRESIDENT was of opinion that Navicular Disease was of a rheumatic character, and he had known Rheumatism follow Purpura and Influenza.

Professor WILLIAMS, in the course of his reply, said he had been led to think that Laminitis arising from bowel affection was most probably septic also. Laminitis was one of the symptoms of Septicæmia induced by the presence of putrid matter in the uterus, and was often associated with diarrhœa.

The PRESIDENT proposed a vote of thanks to Professor Williams for his address, and it was carried unanimously.

Stafford was selected for the meeting of the Association in August.

Prior to the meeting taking place, the members were entertained at luncheon by Messrs. Merrick and Son; and they subsequently dined together under the presidency of Mr. Wragg, when a number of complimentary toasts were proposed.

GLASGOW VETERINARY COLLEGE.

THE winter session of this institution terminated on May 16th, and on the 24th, 26th, and 27th the oral examinations of the Royal College of Veterinary Surgeons were conducted within the museum of the College. The candidates for diploma were also subjected to a rigid practical examination on horses, cattle, and sheep, selected and brought to the College for that purpose. In

addition to the Examining Board, the following gentlemen were also present as *ex-officio* members: Prin. M'Call, F.R.C.V.S.; Professors Cooke, F.C.S.; Wm. Limont, M.A., M.B.; and J. Ferguson, M.R.C.V.S.; Messrs. J. M'J. M'Call, M.B.C.M., M.R.C.V.S.; J. M. Crawford, M.R.C.V.S.; and W. S. Johnson, Secretary.

Nineteen gentlemen presented themselves for the second or practical part of the final examination, and of these the following succeeded in obtaining the diploma of the Royal College of Veterinary Surgeons, viz.: P. J. Austin, Lurgan, County Armagh; J. Borrowman, Auchtermuchty, Fifeshire; A. Campbell, Newtonards, County Down; W. H. Davidson, Ibrox, Lanarkshire; P. Gillespie, Strathbungo, Glasgow; W. M. Hutchinson, Markethill, County Armagh; T. Jarvie, Wishaw, Lanarkshire; J. Kirk, Dumfries; A. Renfrew, Hurlet, Renfrewshire; J. Thompson, Ballykine, Ballinahinch; J. K. Thompson, Londonderry; S. R. Thompson, Dundrod, County Antrim; A. Veitch, Prestwick, Ayrshire; and George Waddell, Glasgow.

Twenty-four students presented themselves for the "B" or second professional examination, and of this number nineteen passed, one with "very great credit" and three with "great credit," viz.: Messrs. A. Campbell, Rutherglen; R. Campbell, Kirkcudbright; J. Douglas, Kirn, Argyllshire; S. E. Dunn, Hazel Grove, Cheshire; J. Forrest, Glasgow; J. A. Gilruth, Arbroath, Forfarshire (v.g.c.); A. Greenhill, Glasgow; A. Hamilton, Glasgow (g.c.); C. T. Holmes, Bishop Auckland, Durham; J. E. Johnston, Donaghmore, County Tyrone; J. A. Jordan, Belfast, County Antrim; T. F. Lennon, Newry, County Down; T. F. Macdonald, Maryhill, Lanarkshire (g.c.); W. Marshall, Drummore, Wigtownshire; S. Martin, Knockanboy, County Antrim; J. W. Neill, Partick, Lanarkshire; W. Packman, Bury, Lancashire; S. C. Pottie, Sydney, New South Wales; and J. D. Walker, Glasgow (g.c.).

The following students passed the "A" or first professional examination, viz: Messrs. R. Aitkenhead, Pollokshaws, Renfrewshire; A. Crabb, Glasgow (g.c.); W. Dawson, Cootehill, County Cavan (g.c.); J. Furniss, Kippax, Yorkshire (g.c.); J. Gillies, Irvine, Ayrshire; D. Hamilton, Fordingbridge, Hampshire; G. Irvine, Glasgow; A. Jackson, Blantyre, Lanarkshire; D. Lochhead, Paisley, Renfrewshire; J. M. Mark, Newry, County Down; J. M'Dougal, Helensburgh, Dumbartonshire; J. M'Kie, Paisley, Renfrewshire (g.c.); W. M'Murray, Dromore, County Down (g.c.); A. M'Nairn, Newton-Stewart, Wigtownshire (v.g.c.); J. Pottie, Paisley, Renfrewshire; W. Robertson, Selkirk; D. Stewart, Inchinnan, Renfrewshire; G. Stewart, Ballymena, County Antrim; and F. Waddington, Bishop Auckland, Durham.

Medals granted by the Highland and Agricultural Society of Scotland, the late Professor Allen Thomson, of London; Mr. Thos. Campbell, F.R.C.V.S., Kirkcudbright; and Principal M'Call, and certificates of merit were awarded in the different branches of study as follows, viz.:—

Horse Pathology (written examination)—Silver medal, Mr. Wm. Logan, Ayr; first-class certificates, W. H. Davidson, S. R. Thompson, and A. Campbell; second-class certificates, A. Renfrew, J. K. Bruce, Alyth; and B. Ferrie.

Cattle Pathology (written examination)—Silver medal, W. H. Davidson; first-class certificates, W. Logan, J. K. Bruce, and G. Waddell; second-class certificates, A. Campbell, A. Renfrew, and S. R. Thompson.

Morbid Anatomy (written examination)—First-class certificates, W. H. Davidson, S. R. Thompson, and G. Waddell; second-class certificates, A. Renfrew, P. Gillespie, and A. Campbell.

Practical Examination of Horses as to Age, Soundness, Operations, etc. (gold medal by Principal M'Call)—James Borrowman.

Practical Examination of Cattle and Sheep as to Age, Soundness, Operations, etc. (gold medal by Mr. Campbell)—Arch. Renfrew.

Anatomy (Special and Comparative)—Silver medal, J. A. Gilruth; first-class certificates, J. E. Johnston and W. Marshall; second-class certificates, J. Douglas, J. Forrest, and J. D. Walker.

Physiology—Silver medal, J. A. Gilruth; first-class certificates, R. Campbell and J. Forrest; second-class certificates, J. Douglas, J. A. Jordan, and J. D. Walker.

Best Professional Examination in Anatomy (gold medal by the late Prof. Allen Thomson)—J. D. Walker.

Junior Anatomy—Silver medal, J. Furniss; first-class certificates, A. M'Nairn and W. Dawson; second-class certificates, G. Irvine, D. Houston, and J. Pottie.

Chemistry—Silver medal, G. Irvine; first-class certificates, J Furniss, W. Dawson, A. M'Nairn, and J. M'Kie; second-class certificates, J. M'Dougal, A. Crabb, D. Lochhead, and D. Hamilton.

Botany (Silver medal)—Medallists, W. Dawson and A. M'Nairn, equal; first-class certificates, J. Furniss, G. Irvine, A. Crabb, and J. M'Kie; second-class certificates, A. Jackson, J. M'Dougal, and R. Aitkenhead.

Principal M'Call's Bursary of £20, or a gold medal the value of that amount, for the student who obtained the highest aggregate marks in his first and second professional examinations before the Board of Examiners, was awarded to G. A. Gilruth.

ROYAL (DICK) VETERINARY COLLEGE.

THE distribution of prizes to the students of the Royal (Dick) Veterinary College took place in the Council Chambers, Edinburgh, on May 21st, in presence of a number of ladies and friends of the College. Lord Provost Boyd presided; and among others present were Bailies Turnbull and Russell, Councillor Murray, Principal Walley, Professors M'Fadyean and Baird, and Mr. A. Harris, clerk to the Dick Trust.

The LORD PROVOST said he was very glad to find that the institution had during the past year not only maintained but increased its reputation. The attendance had been larger than ever, and the session had closed altogether in the most satisfactory way. He was glad to learn that in the opinion of the Professors, who were best able to judge, the actual standing of the various classes had been very satisfactory, and fully equal to anything they had seen in the past, and that the proficiency attained by the different classes had been very marked. He was also pleased to notice that the Fitzwygram prize of £50 had been gained by a student of the College, Mr. A. E. Mettam. He believed it had been very gratifying to the Professors that the conduct of the students during the session had been such as to meet with their utmost approval, and that everything had passed off most pleasantly on both sides.

Principal WALLEY said it was right to point out that some of the competitions extended over the whole curriculum, a period of three years. He was pleased to say that the classes were much larger this year than ever before in the history of the College, and the A and B classes were so much in advance of last year, not only in numbers, but in general intelligence, that some of the Professors had felt it incumbent upon them to give extra prizes. He had great pleasure in announcing that the gentleman who adjudicated upon the essays (Mr. John Malcolm, F.R.C.V.S., Birmingham) was so impressed with their value that he gave an extra medal to the second essayist. In previous years one or two of the students had taken most of the medals, but on this occasion they were more generally distributed. The Principal concluded by handing the prizes to the successful competitors.

The following are the medallists:—Veterinary Medicine and Surgery—

Gold medal, W. P. Weston, Grantham; silver medal, A. Paterson, Ballater. Cattle Pathology—Gold medal, W. P. Weston; silver medal, Arthur Breakell, Garstang, Lancashire. Anatomy (Senior)—Gold medal, W. Sturdy, Skellingthorpe, Lincolnshire; silver medal, W. M. Pye, Witherley, Atherstone. Anatomy (Junior)—Silver medal, P. L. Smyth, Dublin. Physiology—Gold medal, W. Stewart, Belfast; silver medal, W. M. Pye. Practical Pathology—Silver medal, A. Paterson. Materia Medica—Silver medal, W. P. Weston. Chemistry—Gold medal, A. Macfarlane, Doune; silver medal, T. G. Heatley, Winsford, Cheshire; bronze medals, P. L. Smyth, J. A. Hepburn, Milnathort, and C. R. Neale, Arbroath. Practical Chemistry—T. G. Heatley. Botany—Silver medal, G. W. Sturgess, Billesden, Leicestershire; bronze medal, J. A. Hepburn. Practical Botany—Silver medal, T. G. Heatley. Certificates as Pharmacists—Arthur Breakell, W. P. Weston, W. Ackroyd, R. St. J. Walley, D. Stranaghan, L. H. Fairer, and W. J. M'Cartan. Bursary of twenty guineas for the highest percentage of marks gained in the various competitions held during the curriculum—A. Paterson. The Veterinary Medical Association's silver medal for the best essay—J. Higginson, Ruyton XI. Towns. Silver medal for the second best essay—R. St. J. Walley, Edinburgh. Silver medal for best communication—Arthur Breakell.

Bailie TURNBULL congratulated the students and Professors on the success of the College during the year, and said it was very gratifying to those old citizens of Edinburgh who could remember the small beginning of the Dick College to see the eminence to which it had attained. Although the study of veterinary science had reached a high position, he did not see why it should not go on progressing until it attained the same position as medical science generally.

The LORD PROVOST moved a vote of thanks to the Highland and Agricultural Society, which had always taken a very deep interest in the College.

On the motion of Bailie RUSSELL, a vote of thanks was passed to the Edinburgh Street Tramways Company for placing their large stud of horses at the service of the students to aid their clinical training.

Votes of thanks were also given to the donors of prizes, and to the Lord Provost for presiding.

ROYAL AGRICULTURAL SOCIETY.

AT the Monthly Council on June 4th, Mr. DENT presented the following report from Professor Brown :—

Pleuro-pneumonia—During the four weeks ending May 24th there were forty-one fresh outbreaks of this disease reported in Great Britain; thirty-six of them in England in the counties of Chester, Cumberland, Essex, Kent, Lancaster, Leicester, London, Northampton, Surrey, and York (W.R.). The five outbreaks in Scotland occurred in Edinburgh, Fife, Forfar, and Renfrew. The total number of animals attacked was 176, and 804 healthy cattle in contact with the disease were slaughtered. In Ireland eleven fresh outbreaks were reported in the four weeks, forty-one cattle were attacked, and 240 exposed to the risk of infection were slaughtered.

Anthrax.—In the four weeks twenty-one outbreaks of Anthrax were reported, nineteen in England, and two in Scotland. These outbreaks in England occurred at the following places and on the following dates :—Lichfield, April 27th; Northampton, May 1st and 7th; Basingstoke, May 3rd; Cosford, Suffolk, May 7th; North Walsam, Norfolk, May 8th; Hensall, near Selby, May 11th; Liskeard, Cornwall, and Kendal, Westmoreland, May 16th; Skelton, Cumberland, East Retford, Notts, and Stourbridge, Worcestershire, May 17th; Bishop Auckland, Durham, Bacup, Lancashire, and Roth-

bury, Northumberland, May 19th; Bentham, Kirkby Lonsdale, May 21st; Litton Cheney, Dorchester, May 23rd. The two outbreaks in Scotland occurred in Aberdeenshire, May 17th, and Wigtown, May 18th.

The number of animals attacked was 113, of which one was killed, fifty-two died, and forty-seven recovered. In Ireland there were two outbreaks of Anthrax, and two animals attacked.

Swine Fever.—There were 426 outbreaks of this disease reported in the month. This is an increase as compared with the preceding four weeks, but a decrease as compared with the corresponding period of last year. The number of pigs attacked was 2,453; 951 diseased swine were killed, 1,037 died, 157 recovered, and 444 remained alive when the return was made up. In Ireland thirty outbreaks of Swine Fever were reported in the four weeks, and ninety-four pigs were attacked.

Rabies.—In England there were ten cases of this disease reported, one in Derby, three in Hants, one in Surrey, and five in York (W.R.). In Ireland there were thirty-one cases of Rabies returned, twenty in dogs, seven in cattle, two sheep, one pig, and one goat.

Letters had been read from the Worshipful Company of Farriers, forwarding a resolution of thanks for the Society's promised contribution of £50 annually for three years, towards carrying out the objects of the scheme for the examination and registration of farriers or shoeing smiths, and reporting that the sum of £1,300 had up to the present time been subscribed towards the probable expenses of working the scheme; and that consequently the conditions mentioned in the report of the sub-committee (viz., that at least £1,000 shall have been collected before commencement of registration) had been fulfilled. The Committee therefore recommended that the following six representatives of the Society be appointed to serve upon the General Registration Committee, in accordance with the provisions of the scheme:—The President of the Society for the time being, the Chairman of the Veterinary Committee for the time being, Mr. Charles Clay, Mr. Walter Gilbey, Sir Jacob Wilson, and the Secretary. The Secretary had reported correspondence with the veterinary authorities of Dublin Castle as to the necessity of permits issued by them for the return to Ireland of cattle exhibited at Plymouth, and as to the furnishing of certificates to the effect that such cattle are free from disease at the closing of the Show. The Committee reported the death of Mr. Hugh Jones, of Llangefni, the Society's Provincial Veterinary Surgeon for the county of Anglesey, and the Committee recommended that Mr. Owen Thomas, of Tycoch, Llanerchymedd, be appointed in his stead.

Mr. DENT observed that, with reference to the cases of Anthrax reported, Professor Brown believed many of the cases were not Anthrax, because the Professor did not consider that forty-seven would have recovered, as stated. It would probably, therefore, be some other disease, reported as Anthrax. With reference to Pleuro-pneumonia, the return was exceedingly unsatisfactory. The county of Cumberland appeared to have become a sort of sink of infection; and the disease had spread from there to many other places.

Mr. FOSTER said that the great trouble they had to contend against in Cumberland was to find out the disease, the existence of which was concealed. They believed the disease had existed in several places for the last twelve or eighteen months, but they had to prove that it was there before they were able to deal with it.

Earl SPENCER said that as they had heard what had been said about Cumberland, he wished to state the difficulties which they had experienced in the county of Northampton. One difficulty was in the endeavour to trace the source of the disease. They found that in that county the disease almost invariably broke out amongst cows or heifers, and he believed (they could not

actually prove it, but they had considerable evidence to show) that the disease almost always arose from what were called shed cattle. It was an exceedingly difficult matter to trace the disease. They found that the dealers absolutely refused to give any evidence whatever as to where they got their cows. The difficulty, therefore, of any attempt to stop this trade in shed cows was immense. How this was to be done was a very grave question, and he would like to have heard the opinion on the subject of some of the experienced gentlemen who sat in that room. In Ireland in the Dublin dairies, and in Scotland in the Edinburgh dairies, he used to hear the same thing as to the exceeding difficulty of this question. They might have better inspection of dairy sheds in the towns, not only with regard to the sanitary condition of the dairies, because that, he imagined, was really now the object of inspection, but also with regard to the movement of the animals. Whether this should be included in the new Act which the Minister of Agriculture was about to put into force he was not prepared to say, but he thought something in that direction must be done. The disease increased just at the time when the Minister of Agriculture was going to take the matter up. He did not know whether Mr. Chaplin would be able to trace better than they could the source of the disease, but if he could not his task would be an exceedingly difficult one.

Mr. DENT said the outbreaks almost invariably occurred in dairy cows. In their division they had been carrying out the Act in a most stringent manner, and they thought they had obtained some mastery over the disease; but it still lurked and lingered about in the dairies, and was communicated by the cows from one dairy to another. It was almost always amongst the cows, and this led to the slaughter of valuable dairy herds and of young cattle brought into contact with them.

The Earl of RAVENSWORTH referred to the great difficulty there was to get the Borough Councils, who were the governing bodies in the boroughs, to co-operate cordially in a matter of this kind. That in his experience was the great difficulty they had to contend with. Unless they got that perfect co-operation between town and country it was absolutely impossible to trace the disease.

Sir JACOB WILSON concurred with the remarks of the previous speakers, which, he said, showed how much justification there was for the Bill which was now before Parliament. It proved that the real curse had been the concealment of the disease. Whilst, as things stood at present, the Act might be well administered by the local authorities of any district, they had no power to act beyond their respective boundaries; therefore they could not trace where the disease came from or where it went to. In future, with a central authority, they would be able to trace it throughout the whole country irrespective of boundaries. Another thing, the Bill took powers of entry into dairies, which they did not before possess. They therefore hoped that this would give them further powers of discovery. The increase of the disease just now was undoubtedly due to the animals going out to grass and being scattered over the country. If it had been possible for the Bill to come into operation whilst the animals were in the sheds, they would have had a much better opportunity of grappling with the disease. He hoped that when the winter months came on the Government would tackle the subject with energy. Lord Ravensworth had referred to a point which was undoubtedly of great importance. He could point to the Borough of Newcastle, and to the County of Northumberland as an instance where the authorities worked in thorough harmony, and the result of that was that when an outbreak occurred it never spread. The same thing applied in Perthshire and Perth. If the two authorities worked together it was possible to prevent the spread of the disease.

Mr. PELL said he could add nothing to what had been stated by Lord Spencer excepting one reason why there was this very great danger connected with the dairy sheds. He believed that no London dairyman had ever applied for compensation. He could assure the Council that the instances —if indeed there were any—of urban dairymen discovering and disclosing the disease and applying the law for compensation were extremely rare. For this reason. There would be outcries directly on the part of their customers with regard to the sale and purchase of their milk. Therefore, when an urban dairyman found the disease upon his premises, his object was to kill the animal, sell it, get it out of the way, or call in a dealer to purchase the whole herd. The dealer required a certificate of the soundness of the animals, and there were veterinary surgeons in London who were a little obscure about the nature of the disease when called in. The assurance being given that the animals were healthy, the dairy was cleared out, and the cows went down into the country. The virtue attaching to those animals was the price paid by people who knew what a shed animal was by the appearance of the skin. The matter was hedged by the knowledge that, if the animals proved to be unsound, there was a security for more than the value being paid for them in compensation. If, on the other hand, they turned out to be sound, then the people thought they had got a good bargain. That was the reason why they had the great danger with the shed cattle. Until there was some special legislation or action taken by the Board of Agriculture with regard to the dairy sheds of the large towns and of the metropolis to prevent these animals going out, or to register them so that they might be identified, the people in the country would have to pay thousands of pounds which they might be well spared. He was very glad Lord Spencer had taken notice of this subject, and he hoped that before many years something would be done to put a check upon this trade in dairy cattle.

Sir NIGEL KINGSCOTE said this showed that the present Bill in Parliament did not go far enough. Until they made it a criminal offence to sell diseased cattle, it would not be possible to stamp it out of the country.

Jurisprudence.

A HORSE CAUSE.

ON May 4th an action to recover damages for fraudulent misrepresentation on the sale of a horse, and in the course of which some curious evidence was given, came before Mr. Justice Day, sitting without a jury. The action was brought by a Mr. Hazelgrove against Captain Chandos Clifton, who, on leaving the army, set up as a dealer in horses in Banbury. The plaintiff, on visiting the defendant's establishment in July, 1889, selected a black gelding, which the plaintiff asserted was represented by the defendant to be four years old and sound. The horse was bought for £60, Captain Clifton undertaking to pay the carriage to Paddington; but the delivery was to take place at Banbury, the effect of this proviso of course being that the horse was thenceforth at the risk of the plaintiff, who had the horse examined by a veterinary surgeon. The result of this examination was the conviction that the horse was really a three-year-old, and that recourse had been had to the well-known expedient of extracting the lateral milk teeth in order to give the horse a four-year-old mouth. This view of the case was supported by Mr. Cox and Professor Pritchard, veterinary surgeons of eminence. Captain Clifton, on the other hand, denied in the first place that he had warranted the horse at all; and, secondly, averred that the horse was, in fact, a four-year-old at the time of

sale, in July last. On his behalf four veterinary surgeons — viz., Messrs. Dollar, Jacobs, Springate, and Burrell—gave evidence, and all of them declared that the horse in question was a four-year-old, and denied that its mouth had been tampered with. These contradictory opinions on the part of members of the veterinary surgeons are, as is well known, very common features in horse causes; and, had the case rested there, the only thing the judge could have done would have been to say which set of witnesses he believed. It so happened, however, that Captain Clifton was able to call witnesses who professed to give the horse's history from its birth. It was bred by a Welsh farmer named Rowlands, who said it was foaled on May 12th, 1885, and if that were true the horse was four years old in July, 1889. Whether Mr. Rowlands keeps books recording his breeding experiences we do not know, but the date was impressed on his memory by the fact that his wife bare him a child on the same day on which the colt was foaled; so that to some extent the birth certificate of the child would be a certificate of the foal.

In giving judgment, Mr. Justice Day said that Mr. Hazelgrove had wholly failed to prove breach of warranty, if a warranty was ever given. Referring to the question of fraudulent representation, he said that after hearing the horse's history as related by the breeder and other witnesses, he could not doubt that the horse was a four-year-old, and he must come to that conclusion. The thing which most impressed him, the judge remarked, was the conflict of the medical evidence. He could not but think that if anyone wanted to know the age of a horse he had better not consult a veterinary surgeon. In effect, this judgment is tantamount to saying that the learned Judge believed the plaintiff's witnesses to be mistaken in their opinion as to the age of the horse, and as to his mouth having been tampered with.—*The Field.*

Army Veterinary Department.

Gazette, June 24th.

Inspecting Veterinary Surgeon J. Drummond Lambert to be Principal Veterinary Surgeon, *vice* G. Fleming, C.B., who is about to be placed on retired pay.

Veterinary Surgeons Frost (from Burmah) and Betser (from India) have arrived in England on sick leave.

On the promotion of F. Duck to Inspecting Veterinary Surgeon's grade, Veterinary Surgeon First Class B. L. Glover will succeed him in the Remount Department.

The following Royal Warrant was issued in June:—

VICTORIA R.

Whereas We have deemed it expedient to provide for the retention, in certain cases, of Inspecting Veterinary Surgeons beyond the age for compulsory retirement; Our Will and Pleasure is that the following shall be substituted for Articles 408 and 409 of Our Warrant of the 22nd February, 1890:—

408. The appointment of Principal Veterinary Surgeon shall be for seven years, and the retirement of the other officers of Our Veterinary Department shall, subject to Article 407, be compulsory at the age of fifty-five, except that if it should in any particular case be considered that the interests of the public service would be materially advanced by the further retention of an Inspecting Veterinary Surgeon on the Active list, the age for the retirement of such Inspecting Veterinary Surgeon shall be extended to sixty.

Given at Our Court at Windsor, this 16th day of May, 1890, in the 53rd year of Our Reign. By Her Majesty's Command,

STANHOPE.

Obituary.

THE following deaths have been reported by the Registrar, R.C.V.S :—

H. T. Mullinex, M.R.C.V.S., Cricklewood	graduated in	1873
J. Burr, M.R.C.V.S., Albert Gate, London	„	1855
J. Ritchie, M.R.C.V.S., Forfar	„	1868
P. Thrale, M.R.C.V.S., Croydon	„	1838
M. Rees, M.R.C.V.S., Carmarthen	„	1871
P. Bain, M.R.C.V.S., Kirriemuir, graduated in 1863; F.R.C.V.S.		1879

Notes and News.

THE PARIS PASTEUR INSTITUTE.—The Pasteur Institute has now (for the first time since anti-rabic vaccination has been practised) published complete statistics of the results of the Pasteur treatment for Hydrophobia. From January 1st, 1886, to December 31st, 1889, 7,393 persons bitten by mad dogs have been treated; 53 of these have died—a proportion of 0·67 per cent. The proportion of deaths when the treatment is not adopted is 15·90 per cent.; consequently, among the 7,893 patients of the Pasteur Institute, 1,265 would have died had not the Pasteur method of treating Hydrophobia been carried out. The statistics published by M. Perdrix show that there are more cases of Hydrophobia in the Seine Department than in any other. This is explained by the fact that there are more stray dogs in that department than in any other. The number of cases of Hydrophobia depends on the degree of thoroughness with which the police carry out the regulations concerning stray dogs and those that have been bitten. The Pasteur Institute statistics show that there are more cases of Hydrophobia between February and May than at any other time of the year.

DOCKING PONIES.—A man who docked the tails of twenty ponies belonging to John D. Cheever, of New York, was sentenced to imprisonment for twenty days and fined £10, while his assistants were fined £8 each.

DISHORNING CATTLE.—In view of the conflicting legal decisions in this country on the subject of dishorning cattle, to which the Attorney-General for Ireland referred in reply to a recent question in the House of Commons, some remarks of the Consul at New Orleans, in a late report, will be read with interest. Mr. de Fonblanque quotes a report from the director of the Mississippi College and Experimental Station, who says there is not much pain in dishorning cattle if the work is skilfully and quickly performed at the proper season of the year, and properly attended to until the healing process is complete. The cattle should be in good order and well fed. Several strong reasons are given why cattle should be dishorned. In the first place, they hook and torment each other, the stronger constantly persecuting the weak; horns are used as tormentors, not usually as a protection. Strong cattle with sharp horns are the tyrants and persecutors of weak and helpless cattle in the herd, and dishorning makes them peaceable and harmless. A great many more cattle can be made comfortable in the same area of pens or yards without horns than with them. Hornless beeves suffer less on railroad journeys than horned cattle. Again, beeves fatten better without horns than with them, and milch cows are benefited by dishorning. After the healing process is complete the cows give more and richer milk after being dishorned. To prevent the necessity of dishorning, the miniature horns on calves should be removed with a sharp knife, removing the hair and button with one quick

cut. The pain is not so severe as a single stab by a sharp horn, and then is over; the hooking propensity of the animal and the horn are both effectually cut short.

RABIES IN SCOTLAND IN THE LAST CENTURY.—In Vol. iii. of the *Topographica Britannica*, published in 1790, are some letters from Sir John Clerk, who visited Scotland in the middle of the last century. In one of these, written in Edinburgh, on April 13th, 1730, allusion is made to the alarm caused by Rabies, which appears to have been prevalent in that city. He states:—"Some of my family have been in very great danger from *Rabies canina;* an old woman and a child have been bitten to the effusion of a great deal of blood, but no other consequence has hitherto happened. I had two dogs very furious in their distemper; one about a month after the other, which gave me occasion to make some experiments upon them. The ordinary medicines were used to no purpose. I kept them shut up in a room till they died, which they did regularly on the third day. They were furious the two first days and knew nobody, but bit and gnawed everything that was put in to them by the window. They would eat no sort of meat, but drank very plentifully of water; one of them bit a cat, which turned worse than either of them. On the third day the swellings fell away from their heads and mouths, and they turned perfectly calm, but refused to eat. The observations I made on them were these. That this kind of madness in men is accompanied with a horror at the sight of water, yet there is no such thing in dogs. The madness comes not on of a sudden, but takes time; so that sometimes it is the space of a month or a year before it works. The animals I speak of fell ill at a distance of about a month after they were bitten." After a century and a-half, how much is public opinion *now* in advance Sir John Clerk?

THE KOLA NUT.—Professor Häckel, who has made many experiments with kola, states that, contrary to the assertion of Dr. Germain See, caffeine is not the only active principle of kola. It also contains a red substance, to which he has given the name of "kolaine." The substance prevents rapid waste of tissue during fatiguing exercise, whilst the caffeine with which it is combined stimulates the muscles. The kola nut was experimented with during the autumn manœuvres of last year, with such success as to lead the German War Office to order no less than thirty tons of the nut for consumption in the army. A Paris paper cites, as an example of the efficacy of kola, the case of Major Durocher and his orderly, who walked forty-eight miles in fourteen hours, and who afterwards resumed their military duties without having slept. The Paris doctors believe that fasting-men use an alkaloid of kola. Experiments on army horses with kola would not only be interesting, but might prove of great value during a campaign.

THE ACTION OF SUGAR.—From his study of the action of sugar on the body, Albertoni points out the following facts: That the absorption of sugar is most rapid during the first hour after ingestion, that it increases the rapidity of the pulse from six to eight beats per minute, and raises the blood pressure; it increases the velocity of the blood, and, in large doses, stimulates the kidney.

THE NEBULISER.—The nebuliser is a new spray apparatus designed by Dr. Lighthill, of Boston, as a ready means for introducing any liquid remedy direct to the lungs and lower air passages. This is accomplished by means of a containing-vessel, to which is attached an india-rubber bulb, upon squeezing which the liquid within the vessel is discharged from a tube. This tube is held in the mouth while the operation is going on, and the finely-divided liquid, in the form of spray, is drawn into the lungs. Any chosen

remedy can be readily given in this manner, and the method has already been found effectual in many instances.

A POISONOUS PRINCIPLE IN THE EXHALATIONS FROM THE LUNGS.—From experiments undertaken some time ago by two French savants, they detected a certain principle in the exhalations from the human lung which exerted a powerful action, this poisonous property being quite apart from and in addition to the carbonic acid gas which is given off by all animals as a product of expiration. In some fresh experiments a number of rabbits were placed in a series of air-tight cages, so that, as pure air was caused to enter at one end of the series, the rabbits confined in each cage was compelled to breathe the same air until it was discharged at the last cage. Thus the animal in the first cage only was permitted to breathe absolutely pure air. It was found that under these conditions the rabbits placed in the further cages rapidly died. At the same time the experimenters record that animals of various kinds can breathe without inconvenience air containing a high percentage of uncontaminated carbonic acid; and notably is this the case with men, who can breathe for two or three hours air which contains as much as twenty per cent. of that gas. A further experiment was tried of passing the air from the sixth cage through sulphuric acid, by which action the poisonous principle was removed, but the carbonic acid remained. Under these conditions the animals in the last cages lived without inconvenience, whilst that in the sixth cage died after a short time. It seems certain, therefore, that the injurious effect of expired air is due to this poison, and not to the gas named.

HYDROPHOBIA IN PARIS.—Hydrophobia is steadily on the decrease in Paris. Last year there were only 367 cases amongst animals, against 863 during the previous twelve months. Six persons died from Hydrophobia, three of whom had been treated by M. Pasteur, these being the only deaths out of 236 cases of persons bitten within the Department of the Seine who underwent treatment in the Institute.

THE ORIGIN OF THE DOMESTIC DOG.—Mr. A. D. Bartlett has been making observations upon wolves, jackals, foxes, and dogs in the Zoological Gardens and elsewhere. He has come to the conclusion that the varieties of the domestic dog owe their origin to wolves and jackals, that the habit of barking has been acquired under the influence of domestication, and that the dog is the most perfectly domesticated of all animals.

THE LIVE-STOCK OF DENMARK.—A paper recently issued by the Agricultural Department, on the live-stock of Denmark, is of importance to British stockowners, because Denmark stands second, in point of number, among the sources of our supply of foreign cattle. More than half the foreign cattle we import come from the United States, and Canada stands second in respect of fat cattle; but Denmark takes the first place with cows, and comes next to Holland in the supply of calves. In 1889 Denmark sent us 88,853 head of cattle—a large number for so small a country to spare. But that country, with 1,460,000 head of horned stock in 1888, stood next to Ireland among European countries in ratio of cattle to inhabitants. Ireland had 864 to the thousand people, and Denmark 682, the United States coming between with 849. No fewer than 65 per cent. of the cattle in Denmark are cows and heifers in milk, as compared with 40 per cent. in Great Britain and 33 per cent. in Ireland. Sheep have declined in number in Denmark from 1,842,000 in 1871 to 1,549,000 in 1881, and 1,225,000 in 1888; but pigs have increased from 442,000 in 1871, and 527,000 in 1881, to 771,000 in 1888. Horses, too, have increased, the numbers in the three years respectively having been 317,000, 348,000, and 376,000.

THE NUMBERS OF CATTLE PER SQUARE KILOMETRE IN EUROPE AND THE UNITED STATES are as follows:—

Ireland	49	France	25
Holland	47	Italy..	17
Belgium	47	Hungary	16
Denmark	38	United States	6
Switzerland	29	Greece	6
Germany	29	Sweden	5
Austria	29	Russia	5
Great Britain	27	Norway	3

CONDEMNED MEAT IN EDINBURGH.—It is reported that 165,592 lb. of meat unfit for human food was seized or condemned last April in Edinburgh.

BERLIN VETERINARY UNIVERSITY.—This excellent instructional establishment will celebrate its centenary on July 31st.

GOAT VACCINE.—M. Hervieux, in a lengthy paper on goat vaccine, read before the Académie de Médecine, comes to the following conclusions: A goat inoculated with cow's or human lymph furnishes lymph exactly similar to that of the cow; vaccination direct from the goat succeeds as well as from the cow if the lymph is used quite fresh. Vaccination with goat's lymph after it has been used to vaccinate a human subject gives the same results as cow's lymph. In consequence of the discussion at the Academy of Medicine concerning goat's lymph, MM. Bertin and Picq asked that their *pli cacheté* deposited at the Academy last January should be opened. Its contents may be summed up as follows: Tuberculosis may be transmitted to the human subject by cow's lymph. Goats which are refractory to Tuberculosis should be substituted for cows; the latter may be tuberculous, and yet be apparently in perfect health. MM. Bertin and Picq are continuing their experiments on the cow and the goat to ascertain if Tuberculosis can be transmitted either by virus or vaccine.

BISONS.—The *Rural New Yorker* for May 24th has a contribution from Mr. D. H. Talbot (of Sioux City, Iowa) upon the breeding half-bred buffaloes, *i.e.*, bisons. Certain statements have appeared (and have been reprinted in England) that it was probable that cross-breds between the bison of the prairies and the various English breeds of cattle would come into favour from the superiority of the beef and the value of the skin for robes. Indeed, it has been affirmed that the sealskin would have, metaphorically, to take a back seat in the company of fur producers; and that the hero and belle of the future would appear in winter wrapped in a buffaloe-kyloe skin. Mr. D. H. Talbot gives no encouragement to any such dreams of wealth from cross-bred herds. He affirms that of every fifteen cows which fall in calf to a bison bull, half will die before delivery, six will save their lives by aborting, and that one live calf, to the fifteen, is all that his experience leads him to expect. He, in fact, affirms that the incongruity between sire and dam is so great, that as soon as the fœtus begins to have an independent life of its own, it exercises abnormal—and generally fatal—effects upon the cow carrying it: and that she either aborts and recovers: or turns dropsical and dies before delivery.

THE BACILLUS OF GLANDERS.—At a recent meeting ot the Academy of Medicine, M. Cornil gave an account of M. Babes's researches on the bacillus of Glanders, which shows that this micro-organism, when obtained from pure cultivations, can penetrate the healthy tissue of animals, and thus cause Glanders. Rubbing in pomatum containing the bacillus rarely succeeds, and only when the virus is very active, and obtained from a perfectly fresh culti-

vation. M. Nocard has repeated M. Babes's experiments, and two guinea-pigs out of five were infected by rubbing with a pomatum containing the bacillus.

THE RABIES ORDER IN MIDDLESEX.—The report of the Executive Committee of the Middlesex County Council for the quarter ending March 31st last gives some important statistics on the Rabies question. During the three months, no fewer than 1,039 stray dogs were seized, of which only 108 were claimed, the remaining 946 being sent to the Dogs' Home or slaughtered. During the six months ending March, eighteen dogs were destroyed suffering from Rabies, the largest number of which were terriers of various breeds.

ABORTION IN MARES IN KENTUCKY.—According to the latest papers from America, abortion has been unusually prevalent among Kentucky brood mares during the past three months, and that at least seventy-five per cent. of the brood mares in that State, both trotting and thoroughbred, are either barren or have lost their foals this spring. Some breeders attribute this great loss to the mares eating too much of the rank grass the open winter caused to grow so luxuriantly. This belief is partially substantiated by the fact that mares that were barn-fed, with few exceptions, have not aborted. One journal states that Bourbon County has sustained a loss of £10,000 by mares slipping their foals. Fayette has suffered even a greater loss, while Madison and several other counties have to a less extent experienced the same misfortune.

Correspondence.

THE ANNUAL MEETING OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

SIR,—Surely it is time that something was done to put a stop to the nuisance caused year after year at our Annual Meeting, by persons who, devoid of a sense of decency and having no feeling of shame, attend merely for the purpose of giving offence and generating disturbance. Such individuals should be relegated to some more appropriate place. Certain it is, they ought not to be allowed to indulge their bad manners and occupy our time. Things have come to such a pass now that many of our most valued and respected members do not attend the meetings, because of the disgust they feel at the behaviour of a small gang of individuals who waste time and disturb temper by their insolence and nonsense. The Council should devise rules for the conduct of the meeting, and the persons alluded to should be controlled. It is true that the last meeting expressed itself in a stern and unmistakable manner when one of these persons attempted to distinguish himself, and if he has any sense he will hide his diminished head for some years to come—for a more sorry *début* cannot be conceived. But it should not be left to the meeting to put down such disgraceful behaviour, and regulations ought to be framed and enforced. Again, why should there be a whole hour lost between the assembling of the meeting and the commencement of business? This also needs seeing to.

June 4th. F.R.C.V.S.

VETERINARY SURGEONS IN YEOMANRY CAVALRY.

SIR,—I see it stated in the December number of the Journal, that efforts are being made to assimilate the Veterinary Surgeons of the auxiliary forces with those of the regular army. Can you kindly inform me if this desirable

change is likely to take place, and when? My reason for troubling you is that Veterinary Surgeons, who, like myself, have acted in Yeomanry Corps as Veterinary Surgeons with the rank of non-commissioned officer or private, would, in all probability, be put to the expense of providing themselves with two sets of uniform in a short time, viz., that of their regiment, and when converted into a department, that of the department. This expense might be avoided by waiting until the change takes place, if there is any chance of this occurring.

Lambourne, Berks. G. WILKINS, F.R.C.V.S.

[No decision has yet been arrived at with regard to Yeomanry Corps. The regulation as to uniform only applies to Volunteer Artillery at present.]

LARGE CYSTIC CALCULUS.

SIR,—Mr. Freeman, in the April issue of the Journal, mentions a calculus taken from a mare, which weighed 11½ oz. In *The Quarterly Journal of Veterinary Science in India* for July, 1889, an account will be found of a calculus extracted from the female bladder which had to be broken up before removal. The larger fragments, weighed collectively, turned the scale at 14½ oz., the largest single piece was 8 oz., and much *débris*, estimated at over two ounces, was washed out during and after the operation by irrigation. This would give a weight of over 16 oz. I saw this calculus weighed myself. G. M. RAYMENT, A.V.D.

Babugarh, India, *May* 20.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from A. W. Hill, London; R. Rutherford, Edinburgh; Professor McCall, Glasgow; G. J. R. Rayment, A.V.D., India; T. Bowhill, Edinburgh; R. W. Burke, A.V.D., Woolwich; F. Foster, New Mexico, U.S.A.; H. Leeney, East Grinstead; G. Wilkins, Lambourne; F. S. Billings, Chicago, U.S.A.; W. A. Hancock, Newcastle-on-Tyne; Professor Crookshanks, London; "F.R.C.V.S."; F. Raymond, A.V.D., Woolwich; J. Malcolm, Birmingham; J. W. Hill, Hastings; S. Galvayne, London; T. Marriott, A.V.D., Sialkote, India.

BOOKS AND PAMPHLETS: Bulletin des Séances de la Société Nationale d'Agriculture de France; Proces Verbal de l'Académie Royale de Médecine de Belgique; *E. Perroncito*, Sulle Malattie del Bestiame; Minutes of Evidence taken before the Royal Commission on Horse Breeding; *F. S. Billings*, Inoculation for Swine Plague; Johns Hopkins Hospital Bulletin; *P. Paquin*, Texas Fever.

JOURNALS, ETC.: *Moderno Zooiatro; Hufschmied; British Medical Journal; Annales de Médecine Vétérinaire; Quarterly Journal of Veterinary Science in India; Deutsche Zeitschrift fur Thiermedicin und Vergleichende Pathologie; Echo Vétérinaire; Russian Quarterly Journal of Veterinary Science; Recueil de Médecine Vétérinaire; Revue Viterinaire; Wochenschrift für Thierheilkunde und Viehzucht; Clinica Veterinaria; Journal of Comparative Medicine and Veterinary Archives; American Veterinary Review; Live Stock Journal; Thierarzt; Repertorium der Thierheilkunde; Lancet; Provincial Medical Journal; Journal of the National Agricultural Society of Victoria.*

NEWSPAPERS: *Baltimore Sun; Scotsman; Glasgow Herald; Sunday Times; North British Daily Mail; Norwich Mercury; Queensland Telegraph; South-Eastern Gazette; Eastern Morning News; Times.*